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ABSTRACT

This report presents data gathered during the 1973-74 school year on the Austin Independent School District (Austin, Texas) implementation of the Individually Guided Education Program (IGE). Classroom observation indicates on the whole that the 11 schools identified as IGE exhibit greater degrees of implementation of characteristics associated with IGE than do 11 comparison schools; teacher questionnaire data in part verify this for some processes, but not others. Considerable variation is noted among schools within both the overall IGE and the comparison group with respect to the degree to which various processes and inputs are actually implemented. Both parents and staff generally express favorable attitudes toward IGE. Staff members do express some dissatisfaction with the level of support and training they have received. Evidence gathered on various affective and cognitive outcome measures do not, by and large, demonstrate any appreciable differences between IGE and non-IGE comparison schools. Focused case studies of eight randomly selected students indicate striking differences in how IGE and comparison school students spent their days. (Author)

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1973-1974

EVALUATION REPORT

Individually Guided Education (IGE) Program

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I

ABSTRACT

This report presents data gathered during the 1973-74 school year on the Austin Independent School District (Austin, Texas) implementation of the Individually Guided Education Program (IGE). Classroom observation indicates on the whole that the 11 schools identified as IGE exhibit greater degrees of implementation of characteristics associated with IGE than do 11 Comparison schools; teacher questionnaire data in part verifies this for some processes, but not others. Considerable variation is noted among schools within both the overall IGE and the Comparison group with respect to the degree to which various processes and inputs are actually implemented. Both parents and staff generally express favorable attitudes toward IGE. Staff members do express some dissatisfaction with the level of support and training they have received.

Evidence gathered on various affective and cognitive outcome measures do not, by and large, demonstrate any appreciable differences between IGE and non-IGE Comparison schools. Focused case studies of eight randomly selected students indicate striking differences in how IGE and Comparison school students spent their days.

II

DESCRIPTION OF THE PROJECT

A. PROGRAM DESCRIPTION

IGE - What It Is

IGE is the acronym for Individually Guided Education. IGE is an educational program that was designed and developed at the Wisconsin Research and Development Center for Cognitive Learning with the cooperation of other educational institutions including the Institute for Development of Educational Activities, Inc.(/I/D/E/A/).

IGE in the Austin Independent School District

In the spring of 1972 the Austin Independent School District studied the concept of the IGE program, its goals, objectives, and directions. A series of workshops were held to expose IGE and its philosophy to Austin elementary school principals and in turn to their faculties. Of some 22 schools expressing an interest in implementing IGE, eleven were selected as IGE pilot schools. During the first year of implementation the district provided some additional materials, permitted some differentiation of staff by allowing the selection of two aides in place of one teacher and were allowed to choose the number of observers and student teachers in their schools. The Region XIII Education Service Center, the local /I/D/E/A/ representative and program administrator, also provided some additional resources to IGE schools.

Among the stated goals in the IGE literature are the following:

- Continuous evaluation of a child's learning progress and educational needs;
- A variety of audio-visual materials to accomodate a child's learning style;
- A cooperative atmosphere in which the teacher and child decide on the child's instructional objectives and learning activities together; and
- Individualized instruction to permit teacher tutoring.

The organizational structure which IGE literature outlines in order to implement these goals includes:

- A teaching team which is called a "unit" and which is composed of two to four teachers and a unit leader working with 75 to 125 students (The team members skills should encompass the spectrum of school subjects and the children's age-range should cover two to five years.);
- An administrative body known as the Instructional Improvement Committee or IIC which is made up of the school's unit leaders and the principal; and

. A "league" of IGE school members and people from support agencies who share ideas with one another about how to implement IGE.

The eleven IGE pilot schools have approached the task of providing continuous evaluation, a variety of audio-visual materials, individualized instruction, and cooperative planning in many different ways and to varying degrees. However, all the schools have teams, usually called units, and most have an IIC. Austin IGE schools also belong to either of two leagues which include all Region XIII IGE schools.

What it Cost in AISD

a. The actual monetary expenses incurred by AISD implementation of IGE have been shared by the district and the Texas Education Service Center, Region XIII. Costs for the implementation are shown below. ESC Region XIII costs are estimates provided by that agency. AISD costs are also estimates. It should be particularly noted that support in the 1973-74 school year has been extraordinarily limited in terms of such an extensive change effort. This fact may well have a major impact upon results discussed in the following pages.

	1972-1973					1973-74	
	Initial Training			Implementation		Implemen.	
	Materials	Stipends	Staff[1]	Materials	Staff[1]	Staff[1]	Total
AISD	$			11,500[2]	2,550[3]		$14,050
ESC Region XIII	$ 4,000	13,000[4]	2,500[5]		17,000[6]	15,000[7]	51,500
	$ 4,000	13,000	2,500	11,500	19,550	15,000	65,550

[1]Only direct costs for staff are included; that is, additional uncompensated efforts by regular staff such as administrators, principals, or teachers is not included.

[2]$2/student for instructional materials was allocated.

[3]Cost of substitutes provided to allow unit leader training.

[4]260 teachers were paid $50 each.

[5]Direct cost: 1 ESC staff member, 1/5 Full Time Equivalent (FTE).

[6]1½ FTE ESC staff member time including travel.

[7]1 1/3 FTE ESC staff member: 2 day new teacher orientation, 1 day unit leader workshop, and regular on-site visits.

b. Totals by Years

1972-73:	$ 50,550
1973-74:	15,000
	65,550

B. EVALUATION DESCRIPTION

Purposes of the IGE Evaluation

The IGE Evaluation was conducted for two primary reasons:

- To provide information to AISD relative to the program implementation and operation as an assist to decision-making.
- To demonstrate an evaluation model designed for AISD under an ESEA Title III Grant.[1]

Evaluation Design

The design followed in the evaluation of IGE is formalized in the document Evaluation Design: Individually Guided Education (IGE) Program 1973-1974 (Holley, Watkins, et.al., AISD Office of Evaluation: 1973). This document presents the decision questions addressed, objectives measured, related evaluation questions, and data collection and analysis plans.

General Evaluation Approach

The general approach used in this evaluation has been to compare the standing on relevant variables of those schools designated as IGE to that of as comparable a set of 11 non-IGE schools as could be selected. Those factors considered in the selection of comparison schools were socio-economic status of the school population, geographic location in the city, size of the school's student population, and ethnic composition of the student population.

Wherever possible, however, the evaluation has also tried to inspect the effects of high standing on process factors such as interclass grouping, differentiated assignments, pupil autonomy, etc.--whether achieved by IGE or non-IGE schools--upon related outcome measures.

Evaluation Cost

The evaluation of IGE conducted during the 1973-74 school year and funded under an ESEA Title III grant to design and demonstrate an evaluation model for AISD is estimated to have cost in accordance with the breakdown below:

Professional Staff Time	$ 23,700
Classified Staff Time (Clerical, etc.)	8,500
Data Processing	2,500
Reproduction & Printing	1,000
Office Supplies	1,200
Travel (In-District)	860
Misc.	1,000
TOTAL	$ 37,560

[1] Freda M. Holley. Proposed AISD Evaluation Guide 1974-75. (Austin: Austin Independent School District, 1973).

In addition to this noted evaluation cost, it should also be mentioned that AISD contracted some process evaluation during the 1972-73 school year to an external agent. This cost approximately $1500.

III

DECISION QUESTIONS ADDRESSED

Decision questions can ultimately be answered only by those charged with the decision-making responsibility; however, this evaluation section attempts to summarize as clearly as possible the information that has been gathered to assist in that charge. A recommendation by the evaluation staff based upon their knowledge and interpretation of that information relative to each decision question is included in this section. Although this is considered to be a professional responsibility of the evaluation staff, decision-makers are encouraged to review in its entirely all the data presented in the total report in order to arrive at their decisions.

Decision questions to be addressed in this report were established in the fall of 1973 and were set forth in the document Evaluation Design: Individually Guided Education (IGE) Program 1973-74. The questions are considered below as they were presented there in the following sequence: System-Level Decision Questions and Program-Level Decision Questions. School and Classroom-Level Questions will be addressed in individual school supplemental reports or presentations for those schools involved in this evaluation.

A. System-Level Questions

1. Should the Individually Guided Education (IGE) Program be continued at its present level, expanded, or discontinued?

Recommendation:

The IGE program should be continued at its present level for the 1974-75 school year and its evaluation should also continue. Some thought might be given to emphasis upon the various process elements of the program, particularly those mentioned in connection with Question 4 below, and to their degree of implementation rather than to IGE as a label or composite category.

Basis for Recommendation:

Performance by pupils in IGE schools on the various affective and cognitive objectives is, on the whole, no different from performance by pupils in Comparison schools. The fact that IGE pupil performance is, in general, no better than Comparison pupil performance indicates that there is no clear support for expanding the IGE program to other schools. However, the fact that IGE pupil performance is, in general, no worse than Comparison pupil performance indicates that it might be unwise to completely discontinue the program if there is evidence that IGE has some potential value that perhaps has not yet developed. This is particularly true since it appears that IGE principals and faculties feel that it does have potential value. Research presented in Section III indicates that sufficient time may not yet have passed for that potential to have been reached. Attention is also directed to case studies presented

in Appendix O which, although limited in scope, do indicate some important differences in what happens daily to students in IGE schools.

The latter part of the above recommendation relative to emphasis upon process elements rather than the IGE label is supported by the fact that between schools labeled IGE there is often greater process variation than between some IGE and some Comparison schools. See particularly the discussion relative to this question in Section VII of this report.

2. Should the IGE Program be implemented only in schools with student groups having certain identifiable characteristics?

Recommendation:

Implementation should be continued as recommended above without variation.

Basis for Recommendation:

No analysis related to subpopulations revealed any basic differences in effects of any importance.

3. Are additional resource inputs advisable if the decisions on the first and second questions are positive?

Recommendation:

Additional input resources are recommended; in particular it appears that more indications of official approval of teacher efforts, more adequate materials, and additional training should be provided.

Basis for Recommendation:

Teacher and principal questionnaire data indicates the needs in this area. See also Teacher Reaction Sheet Data in Appendix H.

4. Are there any particular characteristics of IGE or individualized instruction whose implementation should be encouraged in AISD elementary schools?

Recommendation:

No absolute recommendations can be made on the basis of this evaluation; however, there are indications that three of the process variables as defined in this report might be encouraged if careful evaluation of this use is also employed. These are: Variety of Grouping, Classroom Harmony, and a Variety of Materials (See Appendices I and G for descriptions of these variables).

Basis for Recommendation:

Interrelationships between various outcomes and processes and inputs were examined, and the information presented in Section VII of this report serves as the basis for this recommendation.

B. Program-Level Decision Questions

1. Should additional training be provided?

Recommendation:

Additional training should definitely be provided.

Basis for Recommendation:

Teacher questionnaire data indicated that 27% of the teacher respondents in IGE schools express some lack of understanding of the IGE program. Moreover, their ratings on all areas for possible additional training indicated moderate to high needs.

2. If additional training is required, should it be of a particular type?

Recommendation:

Training should be provided in the following areas:

- The IGE concept and program.
- Helping children with behavior problems.
- Designing activities to meet the learning needs of students.
- Making materials for use with the teacher's group.
- Diagnosing learning levels.
- Setting learning objectives.
- Working as a team leader.
- Communicating with parents.

Ratings after the first are by rated level of need.

Basis for Recommendation:

Teacher questionnaire data serves as the basis for this recommendation.

IV

CONTEXT DESCRIPTION[1]

Any consideration of the ICE introduction into the Austin Independent School District must take into account the fact that this program represents what is often termed "a complex educational innovation"[2] that has been introduced into a complex formal educational institution. Thus, it seems important to briefly review here what some recent research related to change in organizations is saying.

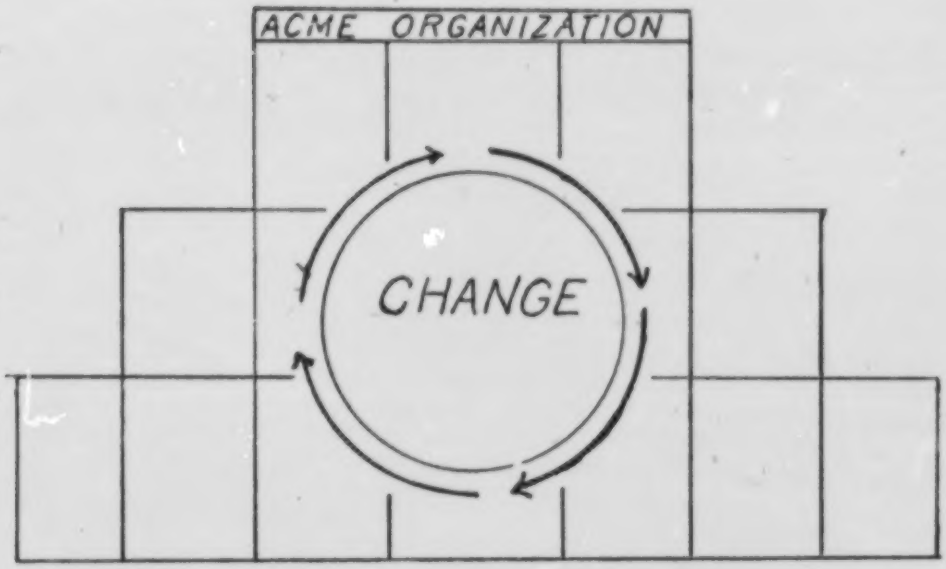

Figure IV-1
Change in Organizations

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[1] This section departs somewhat from the customary context description in order to point out some current thinking about the general context in which any change-producing program will operate. The work in this paper owes its origin and much of its content to Gene Hall whose work is referenced below.

[2] Gene Hall. The Concerns-Based Adoption Model: A developmental conceptualization of the adoption process within educational institutions. Paper presented at the American Educational Research Association Annual Meeting, Chicago: April 1974.

Change in Organizations

First, AISD is a school system--a complex organization with many subsystems made up among other things of stated and unstated goals, formal and informal communication systems, defined and undefined roles and role relations, written and unwritten procedures. Each individual school within the total system is also a complex organization consisting of similar elements. By and large most school systems are

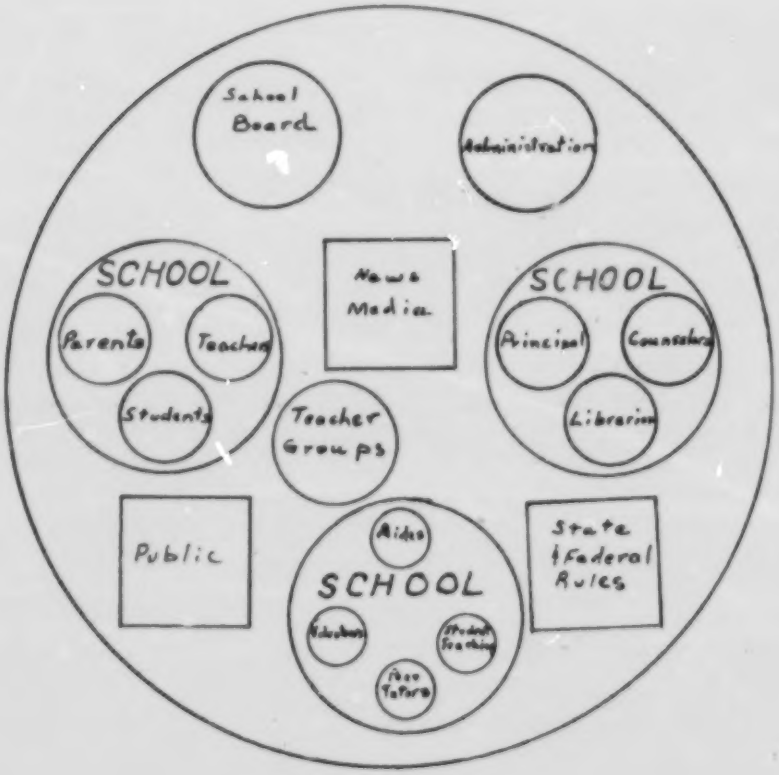
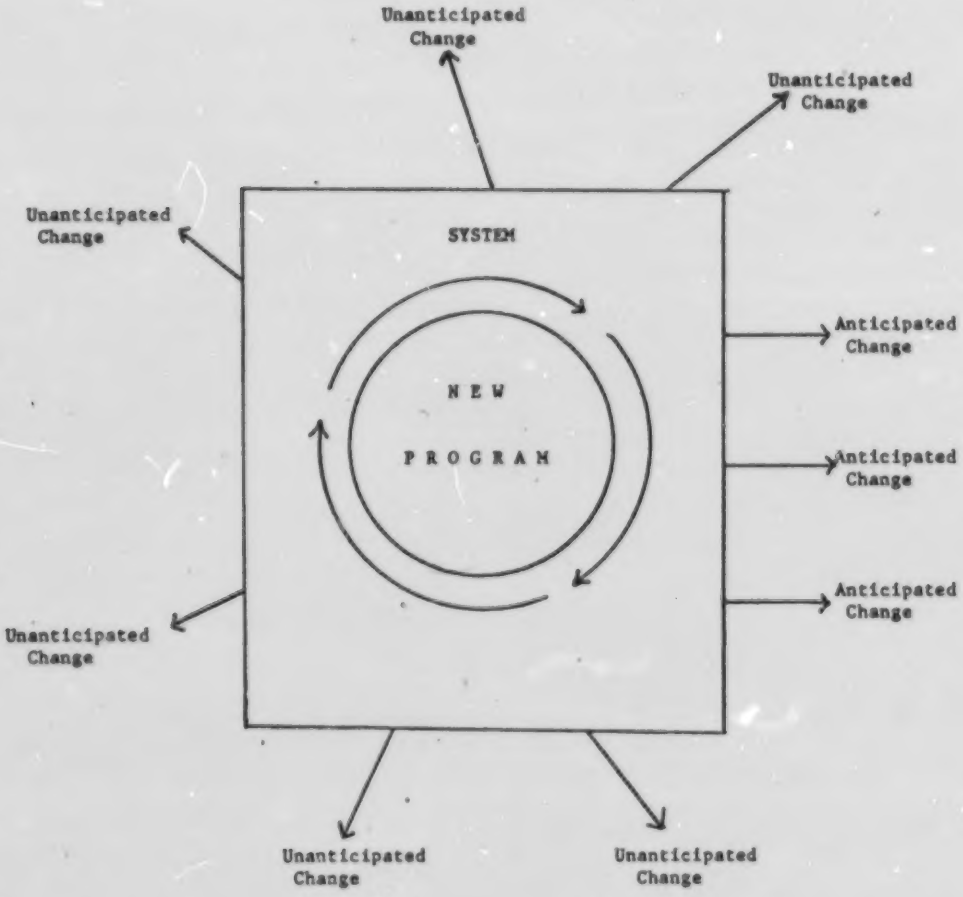


Figure IV-2 School System:

A Complex Organization

bureaucratic in nature and, as such, have many internally constructed barriers to change. Any innovation will have both expected and unexpected impacts upon the system and its subsystems. The more complex the innovation, the heavier and wider will be its impact upon the system.

Figure IV-3 New Program Effects



One writer identifies four organizational areas which may be affected by change as illustrated in Figure IV-4.

(1) the primary goals or objectives of an organization and the subtasks or subgoals necessary for their attainment,
(2) the composition or constitutions of members,
(3) the organization's work procedures and machinery,
(4) its social structure: system of communication, authority structure, roles, and work flow system.[1]

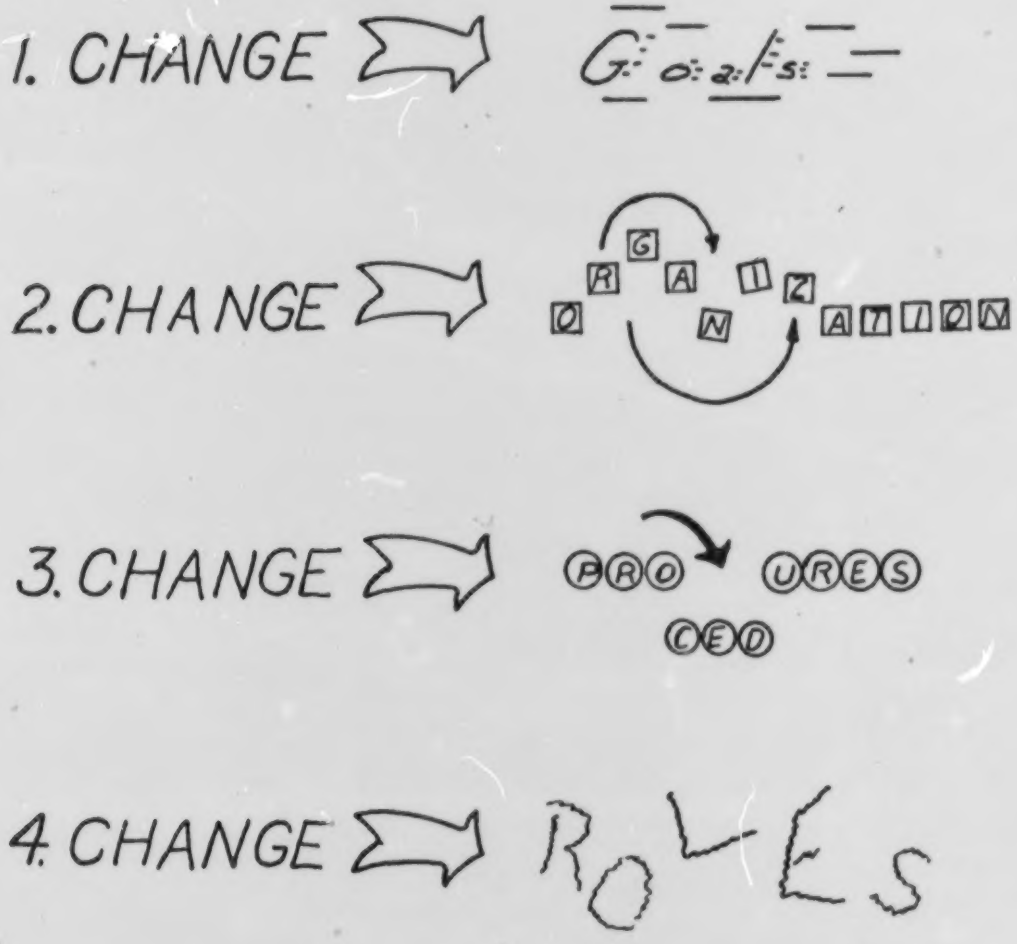


Figure IV-4

[1]Joseph B. Giacquinta, The process of organization change in schools. Review of Research in Education; Fred N. Kerlinger, editor. (Itasca, Illinois: F. E. Peach Publishers, Inc., 1973).

It appears that a complex innovation such as IGE does affect all four areas. In fact, the "bundle" of IGE innovations can be illustrated as individual changes with potential areas of impact as in Table IV-1.

IGE Components \ School Areas of Input	Goals	Organization	Procedures	Roles
Instruction Improvement Committee-Unit Organization (Team-teaching)		X	X	X
Differentiated Staffing		X	X	X
Cross-age Grouping		X	X	X
Peer Tutoring		X	X	X
Individualized Instruction	X	X	X	X
Parental Involvement	X	X	X	X
Shared Decision Making	X	X	X	X
Facilitator		X		X

Table IV-1

IGE: An Innovation Bundle

Stages of Implementation

Several current models outline stages through which an innovation moves. Charters and Jones, for example, identify four levels:

- Level 1 - Institutional Committment
- Level 2 - Structural Context (Changes in formal arrangements and physical conditions)
- Level 3 - Role Performance (Staff Perspective - Changes in actual teaching performance).
- Level 4 - Learning Activities (Student Perspective)[1]

Perhaps, a more enlightening identification of levels of implementation has been outlined in work at the University of Texas by The Research and Development Center for Teacher Education. This model is based upon levels related to the types of concerns expressed by those involved in program implementation. Stages and the examples of the types of concerns related to each are shown in Table IV-2 on the following page. Movement through the stages or levels involves both time and appropriate intervention strategies that facilitate the change. These factors must also be considered in the evaluation of IGE adoption in AISD. The literature suggests, for example, that during the 1973-74 school year, or its second operational year, the IGE implementation may have reached the stage of "Limited Impact" where teachers are saying: "IGE relates to a total instructional program!"

[1]W. W. Charters, Jr. and John E. Jones. On the Risk of Appraising Non-Events in Program Evaluation. Educational Researcher, II, 11 (November 1973, pp. 5-7).

Table IV-2 Stages of Concern and Typical Expressions of Concern About the Innovation[1]

Stage of Concern	Expressions of Concern
Unaware	I don't know anything about it (the innovation).
Awareness	I have heard about the innovation, but I don't know much about it.
Exploration	How much of my time would use of this innovation take?
Early Trial	I seem to be spending all my time in getting material ready for students.
Limited Impact	I can now see how this innovation relates to other things I am doing.
Maximum Benefit	I am concerned about relating the effects of this innovation with what other instructors are doing.
Renewal	I am trying a variation in my use of the innovation that looks like it is going to result in even greater effects.

[1]This table has been taken from the following paper with the author's permission: Gene Hall. The concerns-based adoption model: A developmental conceptualization of the adoption process within educational institutions. Paper presented at the American Educational Research Association, Annual Meeting, (Chicago: April, 1974.)

Thus, at this stage even were the implementation to have been well underway, expected outcomes may only now be beginning to occur. Moreover, it is still probably more appropriate to be concerned with processes being implemented and their quality during this second year than with outcomes.

So?

If indeed an innovation of any complexity and potential organizational impact is introduced into a system, there must be a recognition of its demands upon the system and the time and energy required to adjust to those demands. A system or a school should, for example, be involved in only a manageable level of change; one suggestion has been that no more than three innovations can be managed at any one time. IGE as well as most programs such as bilingual education, the quarter system, or even a change in grading procedures, will actually be a bundle of change incorporating more than three innovations.

Figure IV-5

A Manageable Quantity of Change

Teachers, principals, and others must adjust to new roles and role relationships, change communication patterns as necessary, learn to use new materials. In human terms it must be recognized that such changes place stress upon individuals and that major adjustments in personal styles are required of participants.

Thus, an innovation or improvement of any kind should be given long enough to allow such adjustments to occur and the program to become operational before judgements about its utility are made; again it is probably realistic to give a minimum of three to five years for any program of such scope as IGE to demonstrate its potential. Evaluation

Figure IV-6 Time to Effective
New Program Implementation

should, of course, be continuous in terms of both outcomes and the occurring processes; but the use of this data should be for program adjustments rather than as a base for the abandonment or large-scale expansion of a program.

The Future

In an era in which educational improvement is absolutely essential if the United States, the world, or this system are to meet the challenges to them in the areas of energy, pollution, peaceful coexistence, disadvantaged populations, moral climates, health, and endless other areas, educational institutions of every kind must be wary of creating climates in which improvements are difficult or impossible to achieve. Decisions to embark on program improvements, however, must be rationally based and programs themselves planned with awareness of organizational variables. The institutional mechanisms which permit changes a fair usage trial must be granted; these undoubtedly include:

- The availability of time and resources.
- Freedom to try change without fear of penalty for failure.
- Rewards for success.
- Allocation of substantial financial resources to absorb the cost of experimentation (including failures as well as successes).[1]

Research on organizational change may be beginning to produce the kind of information that can assist organizations to change successfully.

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[1] Brad A. Manning. The "Trouble-Shooting Checklist: A manual to aid educational change agents in the prediction of organizational change potential." (Austin: The Research and Development Center for Teacher Education at The University of Texas, 1973), pp. 21-22.

The information above in this section should in the opinion of the evaluation staff be considered very carefully in making decisions about the IGE program. It may be of particular interest to note the number of schools in IGE that are also involved in other substantive programs introduced or having changes within the past two years.

	Title I	Communications Skills	Career Awareness
Bryker Woods			
Dawson	X		
Doss			X
Harris			
Highland Park			
Odom			
Pecan Springs			X
Rosedale	X		
Rosewood	X		
Sunset Valley			X
Zavala	X	X	

Table IV-3

Other Major Program Involvements

of IGE Schools

Section V

REPORT ON ACHIEVEMENT OF OBJECTIVES

A brief overview of the objectives and the level of attainment can be obtained from the table on the following page. Each objective is discussed in detail below.

OUTCOME OBJECTIVES

I. AFFECTIVE OBJECTIVES

I.1 Increased Positive Attitude Toward School

LEVEL OF ATTAINMENT: Not Achieved to Date

EVIDENCE:

This objective consists of several sub-objectives. Inspection of the results on these given below leads to the conclusion that to date this objective has not been achieved.

I.1.a (Long Term Objective - To be measured some years in the future)

The percentage of former IGE students who have enrolled in grade 10 and elect to drop out of school during that year will be significantly smaller than the corresponding percentage of students who formerly attended one of the control schools. This objective is also applicable for grades 11 and 12.

I.1.b (Long Term Objective - To be Measured some years in the future).

There is no subpopulation of students (as defined by a classification of students according to one or more of the criteria of sex, ethnicity, or previous achievement level) such that the percentage of former IGE students in that subpopulation who have enrolled in grade 10 and elect to drop out of school during that year will be significantly greater that the corresponding percentage of students in the subpopulation who formerly attended one of the control schools. This objective is also applicable for grades 11 and 12.

PROGRAM OBJECTIVES OVERVIEW

Needs	Outcome Objectives	Process Objectives	Input Objectives	Context Description
Not documented	Affective 1. Increased positive attitude by students toward school 2. Improved social and emotional adjustment by students 3. Increased independence in student learning behaviors	Affective (All of the following process objectives are applicable for each of the outcome objectives in the affective domain.) 1. Effective use of interclass grouping 2. Use of a variety of instructional materials 3. Differentiated student assignments 4. Differentiated tutoring 5. Effective disciplinary procedures 6. Effective process implementation 7. Effective parental support	Affective (All of the following input objectives are applicable for each of the outcome objectives in the affective domain.) 1. Balanced assignment of students and teacher to units 2. Information-sharing 3. Professional development 4. Additional training 5. Communication with parents	Not documented
	Cognitive 4. Increased student achievement	Cognitive (All of the following process objectives are applicable for each of the outcome objectives in the cognitive domain.) 1. Effective use of interclass grouping 2. Use of a variety of instructional materials 3. Differentiated student assignments 4. Differentiated tutoring 5. Effective disciplinary procedures 6. Effective process implementation 7. Effective parental support	Cognitive (All of the following input objectives are applicable for each of the outcome objectives in the cognitive domain.) 1. Balanced assignment of students and teacher to units 2. Information-sharing 3. Professional development 4. Additional training 5. Communication with parents	

1.1.c (1973-74 Objective)

The mean score of IGE students on a positive-attitude-towards-school scale will be significantly higher than the comparable mean score for comparison school students.

LEVEL OF ATTAINMENT: Not Achieved

EVIDENCE :

(1) On the "General Attitude Towards School" measure of Pupil Interviews held in the spring and fall of 1973-74, no differences were found between IGE and Comparison schools except that in the spring at the intermediate level (pupils over 9 years of age), the Comparison schools students had a significantly more positive attitude (See Appendix A).

(2) On the "Attitude Towards Individualized Instruction" measure of Pupil Interviews held in the Spring and Fall of 1973-74, no differences were found between IGE and Comparison school students for fall and for spring semesters either at the primary or the intermediate level. (See Appendix A).

1.1.d (1973-74 Objective)

There is no subpopulation of students (as defined by a classification of students according to the criteria of sex or ethnicity) such that the mean score on a positive-attitude-towards-school scale by IGE students in the subpopulation is significantly less than the comparable mean score for comparison school students in the subpopulation.

LEVEL OF ATTAINMENT: Achieved

EVIDENCE:

(1) On the "General Attitude Towards School" measure of the Pupil Interviews held in the spring and fall of 1973-74 no significant differences in average scores were found (a) between IGE males and Comparison males and (b) between IGE and Comparison females.

(2) On the "General Attitude Towards School" measure of the Pupil Interviews held in the spring and fall of 1973-74 no significant differences for each of the three ethnicities considered (Anglo, Black, and Mexican-American) were found between IGE students of the ethnic group and comparable students of that ethnic group.

(3) On the "Attitude Towards Individualized Instruction" measure of the Pupil Interviews held in the spring and fall of the 1973-1974 school year, no significant differences in average scores were found (a) between IGE males and Comparison males and (b) between IGE and Comparison females. It should be noted, however, that whereas males express in the interviews the traditional less positive views of school than females, they express overall a slightly more positive attitude than females toward individualized practices. These differences do not appear to be significant, but do bear watching in the future.

(4) On the "Attitude Towards Individualized Instruction" measure of the Pupil Interviews held in the spring and fall of 1973-74 no significant differences for each of the three ethnicities considered (Anglo, Black and Mexican-American), were found between IGE students of the ethnic group and Comparison school students of the ethnic group.

1.1.e (1973-74 Objective)

The mean student attendance rate for IGE schools will be significantly greater than the comparable mean for comparison schools, where the student attendance rate for a school is defined as the ratio of the average daily attendance (ADA) for that school and the total student membership for that school.

LEVEL OF ATTAINMENT: Not achieved

EVIDENCE:

Attendance at IGE schools was not significantly different from that at Comparison schools (See Appendix B).

I.2 Improved Social and Emotional Adjustment by Pupils

LEVEL OF ATTAINMENT: Not Achieved to Date

EVIDENCE:

Evidence presented below does not on the whole indicate that this objective is being met.

I.2.a (1973-1974 Objectives)

The relative frequency of disciplinary problems for IGE schools will be significantly less than the comparable relative frequency for comparison schools, where the relative frequency of disciplinary problems for a school is defined as the ratio of the number of incidents in the year requiring some disciplinary action in that school to the total student membership of that school.

LEVEL OF ATTAINMENT: Cannot be determined

EVIDENCE:

Discipline data collected from schools was not reliable enough to use (See Appendix D.).

I.2.b (1973-1974 Objectives)

There is no subpopulation of students (as defined by a classification of students according to one or both of the criteria of sex and ethnicity) such that the relative frequency of disciplinary problems within that subpopulation for IGE schools is significantly greater than the comparable relative frequency for control schools.

LEVEL OF ATTAINMENT: Cannot be Determined

EVIDENCE:

Discipline data collected from schools was not reliable enough to use (See Appendix D).

I.2.c (1973-1974 Objectives)

The mean score on the Piers-Harris Self-Concept Scale (administered in Spring 1974) for IGE students will be significantly higher than the comparable mean score for control school students.

LEVEL OF ATTAINMENT: Not Achieved

EVIDENCE:

Evidence on this objective comes from data collected on the Piers-Harris Self-Concept Scale administered (in Title I schools only) in the fall 1973 and again in the spring of 1974.

At the third grade level there was no significant difference between IGE pupils and Comparison pupils on any subscale scores or on total scores on the Piers-Harris self-concept test in the spring or fall except in the "Happiness and Satisfaction" subscale for which the mean score for Comparison students was significantly higher than the IGE students' mean in the fall.

At the fourth grade level, there was a significant difference between IGE pupils and comparison pupils for fall (with IGE means greater than Comparison means) on three subscales — "Behavior", "Intellectual and School Status", and "Popularity" — and on the total score. However, by the spring these favorable differences had disappeared and no significant differences were found.

I.2.d (1973-74 Objective)

The mean score on the Piers-Harris Self-Concept scale administered in Spring 1974 to IGE students will be significantly greater than the comparable mean for the Fall 1973 administration.

LEVEL OF ATTAINMENT: Not Achieved

EVIDENCE:

No significant gains were achieved on total score or any subscale score by IGE students at either third or fourth grade level. In Comparison schools, third graders had significantly losses on both the total score and on three subscale scores. At the fourth grade level, however, Comparison students had significant gains on the total and on four subscale scores.

I.2.e (1973-1974 Objectives)

There is no subpopulation of students (as defined by a classification of students according to one or more of the criteria of sex, ethnicity, or previous achievement level) such that the mean score on the Piers-Harris Self-Concept Scale administered in Spring 1974 to IGE students in that subpopulation is significantly less than the comparable mean for students of control schools.

LEVEL OF ATTAINMENT: Achieved with respect to sex and ethnicity; analysis by achievement level cannot be completed until the fall.

EVIDENCE:

On the Piers-Harris measure there were no significant differences between IGE and Comparison school students for any subgroups of sex or ethnicity at any grade level, spring or fall, except that at the third grade in the fall semester only, IGE females scored significantly less than Comparison females on one subscale (Happiness and Satisfaction).

I.3 Increased Independence in Student Learning Behaviors

LEVEL OF ATTAINMENT: Possibly Achieved

EVIDENCE:

In addition to evidence noted below in relation to stated objectives, it may also be noted that 20% of parents of IGE students Parent Questionnaire (Appendix M, Item 11) responding indicated their child "works on his own "when given homework" versus 18% of comparison school students' parents.

I.3.a (Long Term Objectives)

The mean score of the teacher-ratings of former IGE students (now in high school) on independence of learning behaviors will be significantly higher than the comparable Comparison schools.

I.3.b (Long Term Objectives)

There is no subpopulation of students (as defined by a classification of students according to one or more of the criteria of sex ethnicity, or previous achievement level) such that the mean score of the teacher ratings of former IGE students (now in high school) in the subpopulation on independence of learning behaviors is significantly less than the comparable mean of former Comparison school students in the subpopulation (and now in high school).

I.3.c (1973-1974 Objective)

The mean score on the Pupil Autonomy subscale (in the Classroom Observation Checklist) for all IGE school units observed will be significantly greater than the comparable mean for classes observed in Comparison schools.

LEVEL OF ATTAINMENT: Achieved

Evidence:

IGE schools were rated significantly higher on this factor in both fall and spring observations. (See Appendix I, Table I.1)

I.3.d (1973-1974 Objective)

The mean score on the Pupil Autonomy subscale (in the Classroom Observation Checklist) for all Title I-IGE school units observed will not be significantly less than the Comparison mean score for Title I - Comparison schools. This objective also applies to non-Title I - IGE schools and non-Title I - Comparison schools.

LEVEL OF ATTAINMENT: Achieved

EVIDENCE:

IGE mean scores on this measure in Title I schools are not significantly less than Comparison school scores in Title I, nor are they significantly less for IGE non-Title I schools than for Comparison non-Title I schools.

1.3.e (1973-1974 Objectives)

The mean score on the Pupil Autonomy subscale (in the Teacher Questionnaire) for all IGE school units observed will be significantly greater than the comparable mean for classes observed in Comparison schools.

LEVEL OF ATTAINMENT: Probably Not Achieved

EVIDENCE:

Subscale ratings on Pupil Autonomy on the Teacher Questionnair show a slight, although non-significant, difference toward the Comparison schools. (See Appendix H.)

1.3.f (1973-1974 Objectives)

The mean score on the Pupil Autonomy subscale (in the Teacher Questionnaire) for all Title I-IGE school units observed will not be significantly less than the mean score for Title I-Comparison schools. This objective also applies to non-Title I-IGE schools and non-Title I-Comparison schools.

LEVEL OF ATTAINMENT: Achieved

EVIDENCE:

IGE mean scores on this measure in Title I schools are not significantly less than Comparison school scores in Title I, nor are they significantly less for IGE non-Title I schools than for Comparison non-Title I Schools

II. COGNITIVE OBJECTIVES

II.1 INCREASED PUPIL ACHIEVEMENT

LEVEL OF ATTAINMENT: Uncertain

EVIDENCE:

This objective consists of several sub-objectives. Inspection of the results on these as presented below cannot be conclusively interpreted as indicative of achievement or non-achievement of the overall objective.

II.1.a. (Long Term Objective)

The mean score on the California Achievement Test (CAT) for former IGE students now in the 9th grade will be significantly greater than the comparable mean score for former Comparison school students.

1.b. (Long Term Objective)

There is no subpopulation of 9th grade students (as defined by a classification of students according to one or more of the criteria of sex, ethnicity, or previous achievement level) such that the mean score on the CAT for former IGE students in the subpopulation is significantly less than the comparable mean score for former Comparison school students in the subpopulation.

1.c. (1973-1974 Objective)

The mean CAT reading and/or mathematics score for IGE students will be significantly higher than the comparable mean score for Comparison school students. (This objective as presented in the IGE Evaluation Design has been amended to reflect fact that schools differ in the subject area in which IGE procedures were implemented: five concentrated on reading/language arts, three on mathematics, and three varied concentration within the school.)

LEVEL OF ATTAINMENT: Uncertain

EVIDENCE:

Students overall in IGE achieved no higher at grade 2 than in Comparison schools on the CAT achievement tests

in reading and in mathematics, and at grade 4 IGE students overall achieved significantly lower than comparison school students on both tests. (See Appendix Table E-1. Further inspection, however, reveals that where schools concentrated on reading/language arts, IGE students achieved higher than comparison students in 2nd grade on both reading and math tests and at the 4th grade level on the CAT reading test. Achievement in mathematics also was just very slightly higher at 4th grade level (See Table E-3, Appendix E.) Where schools concentrated on mathematics, however, achievement was lower at both grade levels and in both reading and in math. Achievement was checked for the same grade levels (different students of course) in 1971 (prior to IGE) at which time no differences in achievement existed except that at the 4th grade level on the problem solving subscale of the mathematics test, IGE schools were higher than comparison schools.

The interpretation of achievement test score results is difficult; however, it does not appear justified to expect schools not concentrating on a subject matter area with IGE procedures to achieve higher in that subject area. Yet the comparisons between such a limited number of schools as are concentrating on any one subject area with a similarly limited number of comparison schools is undoubtedly also a somewhat questionable procedures. Differences due to inadequate matching would be particularly likely to be evident and are as likely to explain score variations as would the IGE-Comparison difference. For a more complete discussion of the problem see Appendix E.

II.1.d (1973 - 1974 Objective)

There is no subpopulation of elementary students (as defined by a classification of students according to one or more of the criteria of sex, ethnicity, previous achievement level, or whether they attend a Title I elementary school) such that the mean CAT reading score for IGE students in the subpopulation is significantly less than the comparable mean for control school students in the subpopulation.

LEVEL OF ATTAINMENT: Measurement on this objective will be delayed into the fall.

II.1.e (1973-1974 Objective)

The median percentage of IGE students in Title I schools who improve their performance across all objectives from the fall to spring semester on the Prescriptive Reading Inventory will be significantly greater than the median percentage of equivalent Comparison students who improve their performance across all objectives from the fall to the spring semester. (This objectives has been amended from the original as it appeared in the evaluation design to permit a more parsimonious mode of analysis.)

LEVEL OF ATTAINMENT: Probably Achieved

Of the Title I students who received the Prescriptive Reading Inventory, the median percentage of IGE students at the Fourth Grade Level who improved their performance across all objectives was significantly higher than the equivalent Comparison students. (See Appendix Q.)

PROCESS OBJECTIVES

Process objectives are the same in this program for accomplishing both cognitive and affective objectives.

1. EFFECTIVE USE OF INTER-CLASS GROUPING

   Teachers will make use of grouping procedures to insure that each pupil is assigned to a group performing activities consistent with the pupil's needs and skills.

   LEVEL OF ATTAINMENT: Probably Achieved

   EVIDENCE:

   (1) Classroom observations in the fall indicated that IGE schools had higher ratings on this factor than did comparison schools. In spring observations they were higher but not significantly so (See Appendix I , Table I-1).

   (2) Teachers rated their classrooms significantly higher on Variety of Grouping than did comparison school teachers (See Appendix G , Table G-A).

2. USE OF A VARIETY OF INSTRUCTIONAL MATERIALS

   Teachers will make use of different instructional materials to insure that each pupil works with materials consistent with his needs and skills.

   LEVEL OF ATTAINMENT: Achieved

   EVIDENCE:

   (1) Classroom observation data in both the fall and spring indicated significantly higher ratings on variety of materials. Spring observations further produced data indicating higher ratings for both the availability and the usuage of materials (See Appendix H, Table H-1).

   (2) Teachers in IGE schools gave slightly higher ratings on the teacher questionnaire subscale related to this factor though differences were not significant. (See Appendix G.)

   (3) $2/student for materials was provided to IGE schools in the 1972-73 school year (See Program Description.).

3. DIFFERENTIATED ASSIGNMENTS

Teachers will assign activities and objectives to each pupil based on the pupil's needs and skills.

LEVEL OF ATTAINMENT: Achieved

EVIDENCE:

(1) Classroom Observations indicate significantly higher ratings on differentiated assignments for IGE than for Comparison schools in both fall and spring. (See Appendix I)

(2) Teachers in IGE schools give their classrooms slightly higher ratings on this factor than comparison school teachers (See Appendix G).

4. DIFFERENTIATED TUTORING

Teachers will insure that pupils are tutored by making use of all personnel such as aides or other pupils for tutoring.

LEVEL OF ATTAINMENT: High Achievement

EVIDENCE:

(1) Classroom observation gave IGE schools significantly higher ratings on this factor in both fall and spring observations. In the Spring, ratings indicated a higher degree of both the availability and use of tutoring resources.

(2) Teachers in IGE schools rate themselves more favorably on this factor than do comparison school teachers. (See Appendix G)

(3) It should be noted that both the parent questionnaire (Appendix M) and principal questionnaire (Appendix K) indicate fewer parent volunteers in the IGE than in the Comparison schools. Hence there may be a source of additional tutoring help that can be tapped for IGE schools relative to this objective.

5. CLASSROOM HARMONY

Teachers will insure that a class situation exists with mutual respect between teachers and pupils and among pupils.

LEVEL OF ATTAINMENT: Probably Achieved

EVIDENCE:

(1) Classroom observations gave significantly higher ratings on this factor to IGE schools in the fall than to Comparison schools and higher, although not significantly so, to IGE schools in the spring (See Appendix I.)

(2) Teachers in IGE schools rated their classroom somewhat lower on this factor than did Comparison school teachers although not significantly so. (See Appendix G.)

(3) Case study evidence indicates a strinkingly higher incidence of reprimands received by Comparison school students studied than by IGE students (See Appendix O.)

6. EFFECTIVE PROCESS IMPLEMENTATION

Implementation of processes taken as a total group will be effectively achieved.

LEVEL OF ATTAINMENT: Probably Achieved

EVIDENCE:

(1) On spring and fall classroom observations, IGE classrooms were rated significantly higher on total process score than were Comparison classrooms. (See Appendix I.)

(2) Teachers in IGE schools rated their classrooms equivalently to teachers in Comparison schools with respect to the total process implementation. (See Appendix G.)

7. EFFECTIVE PARENTAL SUPPORT

Principals will conduct a program for keeping parents informed of school activities and soliciting feedback from parents. Parents will on the average express support for the IGE program.

LEVEL OF ATTAINMENT: Probably Achieved

EVIDENCE:

(1) Parents of students in IGE schools express as highly positive attitudes toward their children's school as do Comparison school parents. Moreover, a plurality of parents from IGE schools want their child placed in an open area with several teachers where a plurality of Comparison school parents want their children placed in a classroom with one teacher. (See Appendix M.)

(2) Both principal and parent questionnaires indicate that fewer parents serve as volunteers or resources to IGE than Comparison schools (See Appendices M & K.). If their perceptions are accurate and this can be taken as a measure of parental support, then this is an obvious area needing improvement.

(3) Parents in their free responses on the Parent Questionnaire express their liking for IGE or IGE processes more frequently than anything else. Comparison school parents by contrast most frequently mention liking the teachers.

INPUT OBJECTIVES

Input objectives are the same in this program for accomplishing both cognitive and affective objectives.

1. BALANCED ASSIGNMENT OF STUDENTS AND TEACHERS TO UNITS

   Principals will insure that teachers assigned to a unit are compatible and represent a range of teaching skills and that pupils are assigned to units so that a balanced mixture on the student characteristics of ethnicity and achievement level exists in each unit.

   LEVEL OF ATTAINMENT: Achieved

   Evidence:

   Teacher questionnaire data indicate significant differences in favor of IGE. (See Appendix G, Table G-A.)

2. INFORMATION-SHARING

   Each school and each unit in the school will have an effective procedure for sharing useful information and discussing common problems.

   LEVEL OF ATTAINMENT: Achieved

   EVIDENCE:

   (1) Teachers questionnaire data indicates significant differences in favor of IGE on this objective. (See Appendix G, Table G-A.)

   (2) Principal questionnaire data indicates a slightly favorable indication of an organized program to gather ideas and reactions from teachers for IGE, but a slightly less favorable indication of an organized program to gather ideas from parents. Parent communication methods of various kinds are indicated as being used less by IGE schools than comparison schools.

   (3) Although parent questionnaire results do not indicate a significantly higher perception of communication overall for IGE than for comparison schools, three items on the questionnaire receive slightly more favorable ratings in this regard for IGE than for Comparison schools. The rate their schools communication methods higher; they rate themselves as slightly more familiar with what happens in the classroom; and say the principal is slightly more available to talk with them.

3. PROFESSIONAL DEVELOPMENT

Each school will have an effective procedure for aiding in the professional development of all staff personnel.

LEVEL OF ATTAINMENT: Achieved

EVIDENCE:

Statistically significant differences in favor of IGE schools are found on the subscale of the teacher questionnaire related to this (See Appendix G.)

4. INSERVICE FOR IGE

Region XIII ESC will provide inservice sessions and a facilitator to provide in-service assistance.

LEVEL OF ATTAINMENT: Probably Not Achieved

EVIDENCE:

On their questionnaire teachers rated support for the IGE program as inadequate. Low ratings were given the helpfulness of the people in the IGE program, the adequacy of the materials provided for the IGE program, and the amount of service given by the Region XIII facilitators. Even more indicative is that 27% of IGE teachers responding indicate some degree of lack of understanding of the IGE program and 4% say they do not understand it at all.

5. EFFECTIVE COMMUNICATION WITH PARENTS

Principals and teachers will conduct a program to insure that parents are well-informed of their child's instructional progress and of the instructional activities that are being engaged in at their child's school.

LEVEL OF ATTAINMENT: Probably Not Achieved

EVIDENCE:

(1) A survey of parents reveals no significant difference between parents of IGE school students and parents of Comparison school students regarding the adequacy of school communications concerning their child's instructional progress and regarding the adequacy of school communications concerning the instructional activities engaged in at their schools. (See Appendix M.)

(2) A survey of principals of IGE schools and of Comparison schools reveals that IGE schools do not make more extensive use of any of a variety of methods of communication with parents (such as newsletters, parent-teacher conferences, etc.) than do Comparison schools according to the principal's estimates. (See Apprendix K.)

VI

Interrelationships Between Pupil Performance Measures and Input/Process Measures

The inputs and processes which are involved in the IGE program have been described in other appendices, and the degree to which IGE schools and Comparison schools differ with regard to the degree of implementation of these inputs and processes has been documented.

However, there exists in the literature of IGE, or of individualized education in general, little documentation concerning which inputs and processes are most important in contributing to the students' learning endeavors. In fact, there is little documentation which empirically demonstrates whether these inputs and processes are beneficial at all.

This section describes some preliminary steps in assessing the impact of the inputs and processes on pupil performance. It must be emphasized that the evidence presented in this section is very weak, due to (1) the quite small sample size involved, (2) the unknown reliability and validity of some instrumentation utilized in measuring the implementation of the various processes and inputs, and (3) the fact that the data gathering procedures used were primarily designed for other purposes and are not completely adequate for examining such interrelationships. Consequently, the results of the analyses summarized in this section should not be used as a basis for final decisions concerning which inputs and processes to emphasize and which to deemphasize unless there exists other independent evidence to support such decisions. Rather, the results of this section may be safely used as a guide in suggesting which inputs and processes warrant closer scrutiny and more extensive assessment in the future.

The salient features of the interrelationships analyses are summarized below. Appendix P contains a discussion of the analysis procedure used and the results of these analyses.

Relationships Between Cognitive Performance and Inputs/Processes

Most of the process measures (as obtained for the teacher questionnaire) demonstrated high positive relationships with each of the two cognitive measures considered, the Mathematics and the Verbal/Comprehension subscales of the California Achievement Test (CAT). That is, pupil performance on the CAT subscales was better in schools which exhibited a higher degree of implementation of the processes. None of the process measures obtained from the classroom observation checklist had any significant relationship with either of the CAT subscales.

Three of the four input measures of the Teacher Questionnaire had no significant relationship with either of the CAT subscales. The fourth input measure, need for Additional Training, had a significant negative relationship with both of the CAT subscales.

That is, the pupil performance on the CAT subscales was poor for pupils in schools where teachers had a large need for additional training.

Relationships Between Pupil Attitude and Inputs/Processes

The pattern of relationships between pupil attitude and the inputs/processes is quite different from the pattern of relationships between cognitive performance and the inputs/processes. During the fall semester all relationships between pupil attitude and the processes that were significant were negative relationships; that is, pupil attitude in schools which did not implement the inputs/processes to a great degree was better than the pupil attitude in schools with a high degree of implementation. However, during the Spring Semester all the pupil attitude-process relationships that were significant were positive, with only one exception, Availability of Tutors.

Relationships Between Pupil Autonomy and Inputs/Processes

The relationships between pupil autonomy and the various processes is not completely clear. None of the relationships were significantly negative. The complication is that for each process, the relationship between that process and pupil autonomy is significantly positive when that process is measured by one of the process instruments (either the Teacher Questionnaire or Classroom Observation Checklist) but never for both process instruments. None of the inputs had a significant relationship to pupil autonomy.

Inputs and Processes Warranting Closer Scrutiny in the Future

Three of the processes examined revealed a more consistent type of relationship with the various products than did the other processes. This consistency suggests that information concerning these processes may be more conclusive than for the other processes and that continued study of these processes in the future may be profitable.

For two of these processes, more than 50% of the relationships examined were significantly positive, and none were significantly negative. These processes, Intra-class Grouping and Classroom Harmony, might be considered tentatively to be quite beneficial and therefore to be emphasized in the future. For the third process, Variety of Materials, about 30% of the examined relationships were significantly positive but another 30% of the examined relationships were significantly negative. All of the significantly negative relationships existed only in the fall semester and they all represented relationships with pupil attitude. This suggests that during the fall semester, while pupils are adjusting to the school environment, it might be beneficial to reduce their exposure to a few different types of instructional materials, expanding to a use of more variety of materials later in the year.

VII

Miscellaneous Information

A. "IGE" and "Non-IGE": Real or Questionable Labels?

The discussion in Appendix G indicates that for some of the inputs and processes where degree of implementation is measured by the Teacher Questionnaire, there is a statistically significant difference between the overall degree of implementation in IGE Schools and the overall degree of implementation in Comparison Schools. The discussion in Appendix I indicates similar conclusions for the processes for which degree of implementation is measured by the Classroom Observation Checklist.

However, for any of the inputs or processes for which the degree of implementation for IGE Schools is significantly greater from the degree of implementation for Comparison Schools, it would be incorrect to infer that <u>each</u> IGE School can be characterized by a high degree of implementation of that input or process and that <u>each</u> Comparison School can be characterized by a low degree of implementation of that input or process. This is clearly not the case.

The range from low degree of implementation to high degree of implementation, for Comparison Schools, is roughly the same as the range for IGE Schools. Thus, although the average degree of implementation for IGE Schools is significantly greater than the average degree of implementation, there are some Comparison Schools whose degree of implementation is greater than that of some IGE Schools.

To illustrate, consider the process called Intra-Class Grouping. As indicated in Appendices G and I, the IGE school average is significantly greater than the Comparison School average. However, as Table VII-I indicates, there is a large amount of overlap between the two types of schools regarding degree of implementation of this process as measured by the Teacher Questionnaire and also as measured by the Classroom Observation Checklist.

The intent of the above discussion is to indicate that it is incorrect to infer than an IGE School is categorically different from any other school. The "IGE" label can be utilized to describe a school which is, in principle, committed to the IGE instructional and related activities. However, the "IGE" label is not adequate to describe the degree to which a school is successful in actually implementing those instructional and related activities. Similarly, to describe a school as "non-IGE" is equally non-informative in communicating whether or not that schools instructional activities are similar to those of another school which is described as "IGE."

It is also appropriate to point out that this evaluation by its design and intent describes the differences between these labeled categories of "IGE" and "Non-IGE." Since, in fact, these appear to be real differences in the average degree of implementation for these categories as measured on by both classroom observation and teacher questionnaire data, such comparisons do not appear to be a totally invalid procedure; however, it can still be logically questionned.

B. Limitations of the Evaluation

There are several limitations to the IGE evaluation that is reported in this document. A failure to recognize the existence of these limitations can result in inappropriate use of the reported results. To reduce to liklihood of inappropriate use of these evaluation results, the limitations are described in this section.

Limitations Due to the Unknown Comparability of Comparison Groups

As mentioned elsewhere in this report, a Comparison school was selected for each IGE school so that the two matched schools were as nearly comparable as possible with respect to geographical location in the district, student body size and student body ethnic composition. However, such a matching has little chance of successfully identifying Comparison schools that are, in fact, completely comparable. It must be understood that probably none of the IGE schools is completely comparable to its matched Comparison school. Consequently for example, when the statement is made that "students in Mathematics oriented IGE do not perform as well as students in the matched Comparison schools on the CAT Mathematics Test," it must be understood that this does not necessarily mean that the IGE mathematics instruction is not as effective as the more traditional instruction. It might mean only that the students of the selected Comparison schools are better achievers, regardless of whether their mathematics instruction is by IGE methods or by traditional methods. Similarly, the statement that "students in Reading/Language Arts oriented IGE schools perform better than students in the matched Comparison schools on the CAT Verbal/Comprehension Test" might only mean that the students of the selected Comparison schools are lower achievers, regardless of whether their reading and language arts instruction is by IGE methods or by traditional methods.

There is only one known method which can be expected to circumvent this difficulty: to randomly assign schools to be either IGE schools or Comparison schools. However, this method could not be employed for the IGE evaluation. In general, it is difficult to apply the method of random assignment in any large scale evaluation.

Limitations Due to the Unknown Validity of the Data

The pupil performance measures such as the California Achievement Test and the Piers-Harris Self-Concept Scale have unknown reliability and validity. The unknown reliability of these measures is primarily due to the wide diversity of test administration situation and this in turn affects the interpretation of the test scores. For example, in a school where the test administration were uniformly poor and the resulting test scores were quite low, it is impossible to determine to what extent the low scores are a result of inadequate classroom instruction and to what extent these low scores are a result of the poor administration conditions.

Similar problems potentially exist in all of the instruments designed by the Office of Evaluation. For example, the Pupil Interview form utilized in IGE evaluation is intended to measure the pupils attitude towards school. However, the interviewers discerned an apparent tendency on the part of some pupils to answer that they enjoyed various school activities only because they thought that this was the answer that the interviewer wanted. If this is so, then scores on the Pupil Interview Forms would be affected by this fact in addition to pupils' attitude towards school.

Limitations Due to Definitions of Objectives to be Achieved

A final limitation to the IGE evaluation is that the evaluation efforts may not have been directed at the correct inputs, processes, and products. The IGE literature describes generally what inputs and processes are involved in the IGE program, but these descriptions are not sufficiently precise. Thus it is difficult to determine if the inputs and processes actually examined are those which should have been examined in accordance with the IGE literature.

A somewhat similar problem exists with respect to products. There is no known research which clearly indicates the exact type of products that might be expected to be achieved as a result of a well implemented IGE program. For example, it may be unrealistic to expect IGE students to perform better than other pupils on a general achievement test. However, it may be the case that IGE instruction is quite effective in improving types of cognitive tasks which are not tested by a general achievement test. If this is so, it is possible that the IGE program, as implemented in the Austin Independent School District, may be quite successful in improving student performance in these specific tasks and yet not demonstrate on the CAT their new capabilities. There are probably other affective abilities for which no specific existing tests were available.

Limitations of the Statistical Analyses

Most of the statistical analyses discussed in this report have limitations in the sense that the liklihood of finding a difference if one actually exists is not as high as would be desirable. In all cases this is due to the inadequacy of the available data base which does not include all of the information necessary to perform analysis without such limitations.

In some cases there appears to be no practical means of collecting all the data that would be necessary. However, the analyses could have been improved to a large degree if the following were available:

(1) For all pupil performance measures (such as for the California Achievement Test Battery) the data should be collected and stored so that all pupils of the same unit or class could be identified as such.
(2) For all pupil performance measures, longitudinal data should be maintained, so that each pupil's performance in previous years could be determined.
(3) For all questionnaire and observation data, class data should be collected and maintained.

If the two features above were added to the data base of pupil performance results, analyses could be designed so that if there were differences between IGE pupils and Comparison pupils (whether favoring IGE or favoring Comparison schools), the analysis procedure would be more likely to detect these differences.

As stated above, this was not possible for the IGE Evaluation reported in this document. Therefore, for all results which indicated that there was no difference between IGE and Comparison school students, the following should be considered while interpreting these results: there may have been actual differences, but these differences could not be detected.

Range of Degree of Implementation
of Intraclass Grouping Process

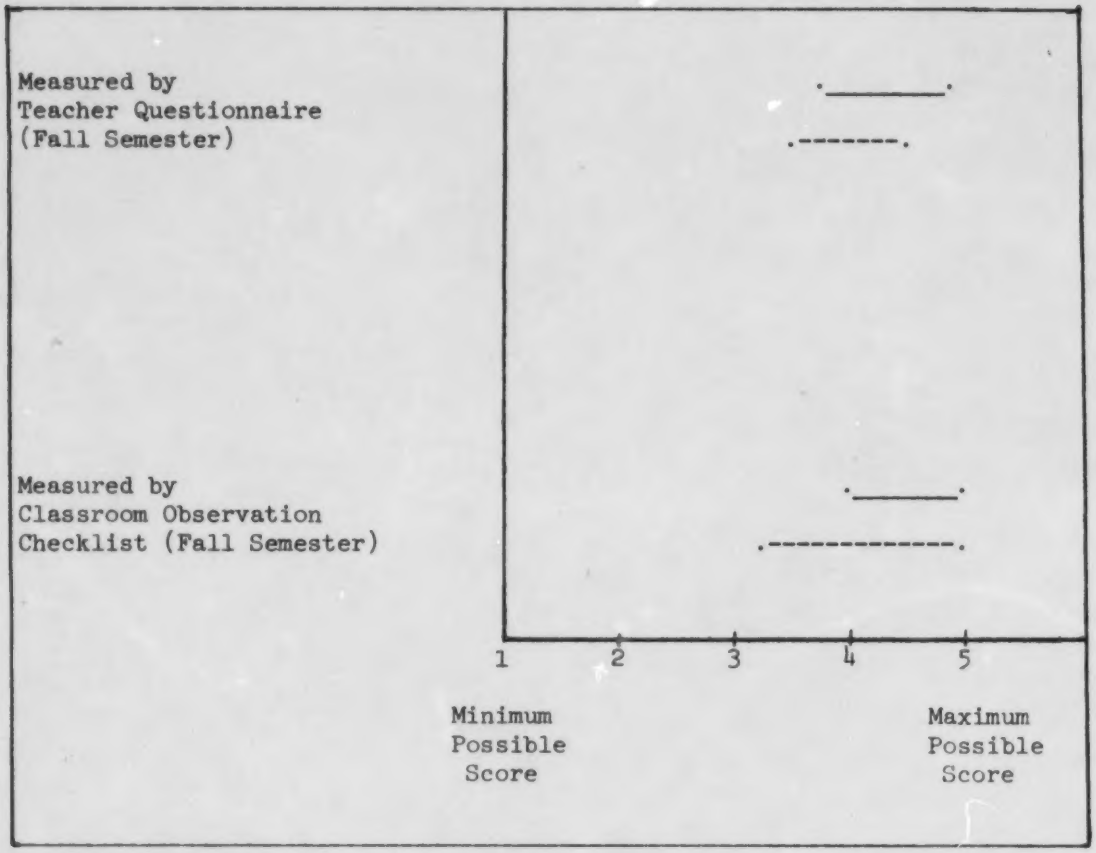


Figure VII - I

Appendix A

Pupil Interviews

Date/Period of Administration:	**Throughout Fall and Spring Semesters**
Population:	**662 Randomly selected pupils in IGE and Comparison Schools**
Administered by:	**Office of Evaluation Staff**
Data Collected by:	**Office of Evaluation Staff**

DESCRIPTION OF THE PUPIL INTERVIEWS

How many administrations of the instrument were there?

One

Where was it administered?

In the schools

Were there any problems with the measure or with the administration which might affect the validity of the data?

The interviewers reported that students in the primary level and low achieving students of the intermediate level occasionally could not comprehend the intent of the interview items. The interviewers also reported an apparent tendency on the part of some students to provide answers that would please the interviewers.

Brief description of the instrument

There were 31 questions which the interviewer asked the student. These dealt with various aspects of school which corresponded with IGE programs or procedures.

What was the rationale for the instrument?

To obtain the views of the students on various aspects of the IGE Program

Who developed the instrument?

Staff of the Office of Evaluation

How was the instrument developed?

It was derived from certain objectives which students would have knowledge of and would be able to respond to.

Is the instrument standardized?

No

Is there any information regarding the reliability and validity of the instrument?

No

Appendix A
Pupil Interviews

During the fall and spring semesters of the 1973-1974 school year, 662 students enrolled in the eleven IGE schools and the eleven Comparison schools were interviewed by Evaluation Office staff. The basic purpose of these interviews was to collect data regarding pupil attitudes towards different aspects of school. Two forms of the Pupil Interview were constructed: a primary level, utilized for pupils less than nine years of age, and an intermediate level, utilized for pupils over nine years of age.

Two different aspects of pupil attitude were considered. One aspect was the pupil's general attitude towards school. The scale utilized to measure this general attitude consists of items asking the degree to which the interviewed pupil enjoys, for example, "reading activities", "going to the library", "school this year", etc. The second aspect of pupil attitude considered was pupil attitude towards specific aspects of instruction commonly associated with individualized learning. The scale utilized to measure this attitude towards individualized instruction consists of items asking the degree to which the interviewed pupil enjoys, for example, "having different age children in your class-room", "using folders and/or files to keep track of your work", etc.

Differences Between IGE and Comparison School Mean Scores, by Semester

For each of the two subscales of each of the two forms of the Pupil Interview the mean subscale score, for all IGE pupils obtained during the Fall semester, was compared to the mean subscale score, for all Comparison School pupils obtained during the Fall semester. Similar comparisons were made for mean subscale scores obtained during the Spring semester.

Tables A-1 and A-2 display the summary data involved in the analyses described above. For pupils who were administered the primary level of the Pupil Interview, there were no significant differences between the mean scores of IGE pupils and of Comparison School pupils for either of the two subscales and during either the Fall or the Spring semester. For pupils who were administered the intermediate level of the Pupil Interview during the Spring semester, Comparison school pupils had a significantly higher mean score than IGE pupils in the General Attitude Towards School subscale. There was no significant difference between IGE and Comparison School pupils on this subscale in the Fall semester, and no significant difference either semester for the Attitude Towards Individualized Instruction Subscale.

Differences Between IGE and Comparison School Changes in Mean Score, from Fall to Spring Semester

To compare the change in mean scores from the Fall to Spring semester for IGE pupils and Comparison school pupils, the following linear model was considered:

$$\mathcal{E}(Y) = a_0U + a_1X^{(1)} + a_2X^{(2)} + a_3X^{(3)} + a_4X^{(4)}$$

Where:

Y is a vector of fall and spring semester scores for the appropriate subscale and level of Pupil Interview, for both IGE and Comparison school pupils.

$X^{(1)}$ is a membership vector containing a "1" if the corresponding element of Y is a subscale score for an IGE pupil obtained in the Fall; "0" otherwise.

$X^{(2)}$ is a membership vector containing a "1" if the corresponding element of Y is a subscale for an IGE pupil obtained in the Spring; "0" otherwise.

$X^{(3)}$ is a membership vector containing a "1" if the corresponding element of Y is a subscale score for a Comparison school pupil obtained in the Fall; "0" otherwise.

$X^{(4)}$ is a membership vector containing a "1" if the corresponding element of Y is a subscale score for a Comparison school pupil obtained in the Spring; "0" otherwise.

Using the above model as a starting model, the following hypothesis was tested: E(IGE School Spring Score) - E(IGE School fall score) = E(Comparison School Spring score - E(Comparison School Fall Score)

Table A-3 displays the summary data involved in the analyses described above. For pupils who were administered the Primary level of the Pupil Interview, the Spring-Fall difference in mean scores for IGE pupils was not significantly different from the Spring-Fall difference in mean scores for Comparison School pupils for both subscales. However, for pupils who were administered the Intermediate level of the Pupil Interview, the Spring-Fall difference in mean scores for Comparison School pupils was significantly larger than the Spring-Fall difference for IGE pupils for the General Attitude towards school subscale there was no significant difference between IGE and Comparison schools for the Attitude towards Individualized Instruction subscale.

Difference Between IGE and Comparison School Mean Subscale Scores for Pupils of a Given Sex or Ethnicity.

The analyses reported in the two previous sections pertain to pupils overall, and disregard the fact that for some particular subpopulation of students, the degree to which attending an IGE school or a Comparison school affects the attitude of pupils in that subpopulation may differ from the degree to which attending an IGE school or a Comparison school affects the attitude of pupils overall. In this section, analyses are discussed which examine such a possibility.

Two such analyses are discussed in this section. The first analysis compares all male pupils in IGE Schools with all male pupils in Comparison schools, and simultaneously compares all female pupils in IGE Schools with all female pupils in Comparison schools. Each of the two subscales, obtained from pupils during a particular semester and with a given level of the Pupil Interview were considered by use of the following linear model:

$$\mathcal{E}(Y) = a_o U + a_{im} X^{(IM)} + a_{cm} X^{(CM)} + a_{if} X^{(IF)} + a_{cf} X^{(CF)}$$

Where: Y is a vector of subscale scores
U is the unit vector
$X^{(IM)}$ is a membership vector for male IGE school students
$X^{(CM)}$ is a membership vector for male Comparison school students
$X^{(IF)}$ is a membership vector for female IGE school students.
$X^{(CF)}$ is a membership vector for female Comparison school students.

Two hypotheses were tested simultaneously, using the above linear model:

$\mathcal{E}$(IGE male score) = $\mathcal{E}$(Comparison male score)
$\mathcal{E}$(IGE female score) = $\mathcal{E}$(Comparison female score)

Tables A-4 and A-5 display the summary data involved in these analyses. For each of the subscales, based in each of the two levels of Pupil Interview and for both Fall and Spring semesters, there was no significant difference between IGE and Comparison males or between IGE females and Comparison females.

In the second type of analysis of this nature, pupils were classified as to ethnicity and the difference in mean subscale scores for IGE pupils and Comparison school pupils for each of the ethnic groups was considered. Each of the two subscales, obtained from pupils during a particular semester and with a given level of the Pupil Interview, were considered by one of the following linear model:

$$\mathcal{E}(Y) = a_o U + a_{IW} X^{(IW)} + a_{CW} X^{(CW)} + a_{IB} X^{(IB)} + a_{CB} X^{(CB)}$$
$$+ a_{IM} X^{(IM)} + a_{CM} X^{(CM)}$$

Where: Y is the vector of subscale scores
U is a unit vector
$X^{(IW)}$ is a group membership vector for IGE white students
$X^{(CW)}$ is a group membership vector for Comparison school White Students
$X^{(IB)}$ is a group membership vector for IGE School Black Students
$X^{(CB)}$ is a group membership vector for Comparison Black Students
$X^{(IM)}$ is a group membership vector for IGE School Mexican-American Students
$X^{(CM)}$ is a group membership vector for Comparison School Mexican-American Students

Three hypotheses were tested simultaneously, using the above linear model:

$\mathcal{E}$(IGE White Students) = $\mathcal{E}$(Comparison White Students)
$\mathcal{E}$(IGE Black Students) = $\mathcal{E}$(Comparison Black Students)
$\mathcal{E}$(IGE Mexican-American Students) = $\mathcal{E}$(Comparison Mexican-American Students)

Tables A-6 and A-7 display the summary data involved in these analyses. For each of the subscales, based on each of the two levels of the Pupil Interview and for each of the Fall and Spring semesters, there was no significant difference between IGE Pupils and Comparison school pupils of any of the three ethnic groups.

The IGE Evaluation design specified a third set of analyses to be performed in these analyses, the difference in attitude between IGE School pupils and Comparison School pupils for each of the possible combinations of sex and ethnicity (e.g., Mexican-American males, White females, etc.) However, it was found that when pupils are classified by sex and ethnicity, the number of pupils in some of the groups created are so small as to make statistical analyses of questionable value. Consequently, these analyses were not performed.

Pupil Interview
Primary Level
Analyses Comparing IGE And Comparison School Pupils, By Semester

Subscale	Semester	Average Scores		Results of Analysis
		IGE Schools	Comparison School	
General Attitude Towards School	Fall	4.27	4.24	NS
	Spring	4.10	4.17	NS
Attitude Towards Individualized Instruction	Fall	4.40	4.40	NS
	Spring	4.23	4.30	NS

Note 1. NS - No significant difference between means at α = .05 level

Table A-1

Pupil Interview
Intermediate Level
Analyses Comparing IGE And Comparison School Pupils, By Semester

Subscale	Semester	Average Score		Results of Analysis
		IGE	Comparison	
General Attitude Towards School	Fall	4.08	4.02	NS
	Spring	3.86	4.00	*
Attitude Towards Individualized Instruction	Fall	4.10	4.00	NS
	Spring	3.97	4.08	NS

Note 1. NS - No significant difference between means at = .05 level

* - Significant difference between means at = .05 level

Table A-2

Pupil Interview
Analyses Comparing IGE and Comparison School
Changes, from Fall to Spring Semester

Subscale	Level	Spring - Subscale Mean / Fall Subscale Mean		Results of Analysis'
		IGE	Comparison	
General Attitude Towards School	Primary	- 0.17	- 0.17	NS
	Intermediate	- 0.21	- 0.03	*
Attitude Towards Individualized Instruction	Primary	- 0.17	- 0.11	NS
	Intermediate	- 0.12	0.08	NS

Note 1. NS - No significant difference between differences at $\alpha = .05$ level

* - Significant difference between differences at $\alpha = .05$ level

Table A-3

Pupil Interviews
Sex Analysis
Fall Semester

Subscale	Level	Program	Males	Females	Results of Analysis'
General Attitude Towards School	Primary	IGE	4.25	4.29	NS
		Comparison	4.12	4.40	
	Intermediate	IGE	4.04	4.11	NS
		Comparison	4.01	4.03	
Attitude Towards Individualized Instruction	Primary	IGE	4.33	4.47	NS
		Comparison	4.30	4.53	
	Intermediate	IGE	4.02	4.15	NS
		Comparison	3.93	4.06	

Note 1. NS - The hypothesis $\psi_M = \psi_F = 0$ is not rejected at $\alpha = .05$ level

where: $\psi_M = \mathcal{E}$(IGE Males) - $\mathcal{E}$(Comparison Males)

$\psi_F = \mathcal{E}$(IGE Females) - $\mathcal{E}$(Comparison Females)

Table A-4

Pupil Interviews
Sex Analysis
Spring Semester

Subscale	Level	Program	Subscale Mean		Results of Analysis
			Males	Females	
General Attitude Towards School	Primary	IGE	4.08	4.11	NS
		Comparison	4.07	4.24	
	Intermediate	IGE	3.83	3.90	NS
		Comparison	3.97	4.03	
Attitude Towards Individualized Instruction	Primary	IGE	4.35	4.16	NS
		Comparison	4.22	4.33	
	Intermediate	IGE	4.00	3.94	NS
		Comparison	4.13	4.02	

Note 1. NS - The hypothesis $\psi_M = \psi_F = 0$ is not rejected at $\alpha = .05$ level,

where: $\psi_M = \mathcal{E}$(IGE Males) - $\mathcal{E}$(Comparison Males)

$\psi_F = \mathcal{E}$(IGE Females - $\mathcal{E}$(Comparison Females)

Table A-5

Pupil Interviews
Ethnicity Analyses
Fall Semester

Subscale	Level	Program	Subscale Mean White	Black	MA	Results of Analysis[1]
General Attitude Towards School	Primary	IGE	4.34	4.15	4.15	NS
		Comparison	4.28	4.39	4.07	
	Intermediate	IGE	4.11	4.14	3.90	NS
		Comparison	4.02	3.75	4.18	
Attitude Towards Individualized Instruction	Primary	IGE	4.41	4.61	4.33	NS
		Comparison	4.43	4.65	4.20	
	Intermediate	IGE	4.12	3.99	4.04	NS
		Comparison	3.98	3.93	4.14	

Note 1. NS - The hypothesis $\psi_{wh} = \psi_{Bl} = \psi_{MA} = 0$ is not rejected at $\alpha = .05$ level

where: $\psi_{wh} = \mathcal{E}$(IGE Whites) - $\mathcal{E}$(Comparison Whites)

$\psi_{Bl} = \mathcal{E}$(IGE Blacks) - $\mathcal{E}$(Comparison Blacks)

$\psi_{MA} = \mathcal{E}$(IGE MA's) - $\mathcal{E}$(Comparison MA's)

Table A-6

Pupil Interviews
Ethnicity Analyses
Spring Semester

Subscale	Level	Program	Sub Scale Mean White	Black	MA	Results of Analysis'
General Attitude Towards School	Primary	IGE	4.07	4.41	4.13	NS
		Comparison	4.24	4.15	3.94	
	Intermediate	IGE	3.88	3.79	3.84	NS
		Comparison	4.02	3.81	4.04	
Attitude Towards Individulized Instruction	Primary	IGE	4.25	4.45	4.15	NS
		Comparison	4.34	4.64	3.97	
	Intermediate	IGE	3.93	3.62	4.21	NS
		Comparison	4.02	4.15	4.23	

Note 1. NS - The hypothesis $\psi_{wh} = \psi_{Bl} = \psi_{MA} = 0$ is not rejected at $\alpha = .05$ level

where: $\psi_{wh} = \mathcal{E}$ (IGE Whites) - $\mathcal{E}$ (Comparison Whites)

$\psi_{Bl} = \mathcal{E}$ (IGE Blacks) - $\mathcal{E}$ (Comparison Blacks)

$\psi_{MA} = \mathcal{E}$ (IGE MA's) - $\mathcal{E}$ (Comparison MA's)

Table A-7

APPENDIX B

Pupil Attendance Reports

Date/Period of Administration:	End of 1973-74 School Year and End of 1972-73 School Year
Population:	All Students Enrolled in AISD IGE Schools and Comparison Schools
Administered by:	Not Applicable
Data Collected by:	Department of Pupil Accounting

Appendix B

Pupil Attendance

The Department of Pupil Accounting prepares a yearly report summarizing the average daily attendance (ADA) and the Average Daily Membership (ADM) for each school in the district. Using this data, a determination of the degree of impact of the IGE program on pupil attendance was made, as follows:

For each of the eleven IGE schools and for each of the comparison schools, the percentage of student attendance was determined by dividing the ADA of that school by the ADM of that school. These school percentages for the 1973-74 school year are displayed in Table B-1. The analyses were performed on these computed percentages. The distribution of these obtained percentages was quite negatively skewed and so a non-parametric test, the Median Test, was utilized.

The following hypothesis was tested:

> Median of IGE percentage of student attendance, 1973-74 =
> median of Comparison percentage of student attendance, 1973-74

This hypothesis was not rejected at the $\alpha = .05$ level. This means that the percentage of student attendance for IGE schools in the current school year is is essentially equal to that of the Comparison schools. Table B-3 displays the summary data for this analysis.

The same analysis was also performed on the percentages of student attendance during 1972-73 the previous school year. These percentages are displayed in Table B-2. The hypothesis of equal medians for IGE schools and for Comparison schools during the 1972-73 school year was also not rejected. Thus, IGE and Comparison schools also had essentially equal percentages of student attendance during the pervious school year. Table B-4 displays the summary data involved in this analysis.

In addition, the difference in the 1973-74 percentage and the 1972-73 percentage was computed and these differences were also analyzed by use of the median test to determine if there was any significant difference in the gain in percentage between IGE schools and comparison schools.

The following hypothesis was tested:

> Median of IGE differences in percentages, from 1972-73 to 1973-74 =
> Median of Comparison school differences in percentages, from 1972-73
> to 1973-74.

This hypothesis was also not rejected at the $\alpha = .05$ level. This means that the degree to which the percentage of student attendance in IGE schools changed, from the previous school year to the present school year, is essentially identical to the degree to which the percentage of student attendance in Comparison schools changed over the same time period. Table B-5 displays the summary data involved in this analysis.

Percentage of Pupil Attendance
During 1973-74 School Year
for Individual Schools

IGE SCHOOLS		COMPARISON SCHOOLS	
School	Percentage of Attendance	School	Percentage of Attendance
Bryker Woods	94.62%	Casis	94.55%
Dawson	92.64%	Becker	89.30%
Doss	95.19%	Hill	95.45%
Harris	95.28%	Winn	95.09%
Highland Park	95.90%	Gullett	95.29%
Odom	93.90%	Cunningham	94.99%
Pecan Springs	95.13%	Andrews	94.59%
Rosedale	93.40%	Ridgetop	94.37%
Rosewood	88.00%	Campbell	91.89%
Sunset Valley	94.83%	St. Elmo	93.64%
Zavala	92.08%	Brooke	91.11%

Table B - 1

Percentage of Pupil Attendance
During 1972-73 School Year
for Individual Schools

IGE Schools		Comparison Schools	
School	Percentage of Attendance	School	Percentage of Attendance
Bryker Woods	95.19%	Casis	95.49%
Dawson	93.82%	Becker	91.10%
Doss	95.59%	Hill	95.63%
Harris	95.87%	Winn	96.12%
Highland Park	95.99%	Gullett	95.50%
Odom	95.13%	Cunningham	95.60%
Pecan Springs	95.78%	Andrews	95.54%
Rosedale	94.48%	Ridgetop	94.85%
Rosewood	90.59%	Campbell	92.50%
Sunset Valley	95.42%	St. Elmo	94.80%
Zavala	92.77%	Brooke	91.95%

Table B - 2

Differences Between IGE and Comparison Schools
on Percentage of Student Attendance
During 1973-1974 School Year

Median Percentage		Results of Analysis[1]
IGE	Comparison	
94.62%	94.55	NS
Note 1. NS - No significant difference between medians at α -.05 level		

Table B - 3

Differences Between IGE and Comparison Schools
on Percentage of Student Attendance
During 1972-1973 School Year

Median Percentage		Results of Analysis[1]
IGE	Comparison	
95.10%	95.49%	NS
Note 1. NS - No significant difference between medians at α = .05 level		

Table B - 4

Differences Between IGE and Comparison Schools
on Gain in Student Attendance Percentage
from 1972-73 to 1973-74[1]

Median Gain		Results of Analysis[2]
IGE	Comparison	
- 0.65%	- 0.84%	NS
Note 1 - Gain = 1973-74 ADA/ADM - 1972-73 ADA/ADM		
Note 2 - NS - No significant difference between median gains at α=.05 level		

Table B - 5

APPENDIX C

Piers-Harris Self-Concept Test

Date/Period of Administration:	Fall and Spring Semesters During 1973-74 School Year
Population:	All 3rd and 4th Grade Pupils in Title I Schools
Administered by:	Teachers of Pupils
Data Collected by:	Office of Evaluation

Piers-Harris Instrument Description

Who was the measure given to?

All 3rd and 4th grade pupils attending Title I IGE and Title I Comparison schools.

When was the measure administered?

In November, 1973 and April, 1974.

How many administrations were given?

Two for each pupil, once in November and once in April.

Where was the test administered?

In the classrooms

Who administered the test?

Classroom teachers

Training of administrators of the test:

No special training of administrators was provided

Problems with the test or administration that might affect the validity of the data

Due to lack of special training, the test administrations in different classes may have been conducted in differing situations. There is however no documentation regarding whether or not different administration conditions actually occured.

Brief description of instrument

The test consists of 80 self-report items such as "I like being the way I am" and "I am slow in finishing my school work". The responses to each item is considered to be a description by a pupil of some aspect of his/her self-concept. The items are grouped into categories so that all items in a category describe the same aspect of the self-concept. The scores obtained are the mean responses for all items within each category (a subscale score) and the mean response for all items of the test (the total score)

Who Developed the Test?

Dr. Ellen V. Piers and Dr. Dale B. Harris

How was the test developed?

From an initial pool of items, those items which had a reasonable large variance and which were successful in discriminating between high-scoring and low scoring pupils were retained. The retained items were grouped into subscales as determined by a factor analysis of item responses.

Is the instrument standardized?

Standardization of the Piers-Harris has been accomplished. However, the test manual does not present standardization data in a manner which might be useful.

Reliability and validity of the instrument

Kuder-Richardson Formula 21 coefficients reported in the test manual range from .78 to .93, with a median of the six coefficients reported being .895 and only one coefficient below 0.88. Thus the internal consistency of the instrument appears to be quite acceptable. The validity data reported in the manual is not as impressive or as consistent. Correlations with similar self-report measures range from .68 to .64, while correlations with ratings by teachers and peers range from .49 to those not significantly different from zero.

APPENDIX C

Analyses and Results for the Piers-Harris Self-Concept Scale:

The Piers-Harris Self-Concept Scale was administered to all 3rd and 4th grade pupils attending one of the Title I elementary schools during the Fall semester and during the Spring semester of the 1973-74 school year.

Use of the scale provides six subscales scores and one total score. Each subscale score provides an indication of the degree of positive self-concept which exists with regard to some aspect of the person. The six subscales pertain to self-concept regarding Behavior, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, and Happiness and Satisfaction. The total score describes the overall degree of self-concept, with respect to all six of the aspects listed above. In each case, a high score indicates a favorable self-concept. Table C-13 provides more complete information regarding the Piers-Harris test.

Differences Between IGE and Comparison School Mean Scores, by Semester

For each of the six subscales and for the total scale, the average 3rd grade IGE pupil score obtained during the Fall semester was compared to the average 3rd grade Comparison school pupil score obtained during the Fall semester. A t-test was utilized to examine differences between these average scores. Similar analyses were performed for scores of 3rd grade pupils obtained in the Spring semester, and for scores of 4th grade pupils obtained during the Fall and Spring semesters. Mean scores and the results of the analyses for 3rd grade pupils and for 4th grade pupils are reported in Tables C-1 and C-2 respectively.

Third grade IGE and Comparison school pupils generally have equivalent self-concept scores for all subscales and for the total scale for both Fall and Spring semesters, with one exception: for the Happiness and Satisfaction subscale, the mean Comparison school score in the Fall was significantly higher than the mean IGE score.

The analysis results for the 4th grade pupils for Fall semester scores was quite different. For three of the subscales (Behavior, Intellectual and School Status, and Popularity) and for the total scale, the IGE mean score was significantly greater than the Comparison school mean. For all of the mean subscale scores and mean total score obtained for 4th grade pupils during the Spring semester, there were no significant differences between IGE pupils and Comparison school pupils.

Differences Between IGE and Comparison School Gains from Fall to Spring

The analyses reported in the previous section were conducted separately for each semester. In this section analyses are reported which consider the change in self-concept of pupils, from the Fall to the Spring semester. In the Groups x Trials analyses performed, two linear models were used. The first model, used to examine the overall group effect, was:

$$\mathcal{E}(Y) = a_o U + a_I X^{(I)} + a_c X^{(c)}$$

Where: Y is a vector with each element being the average of the Fall and Spring scores for one pupil

U is the unit vector

$X^{(I)}$ is a group membership vector for IGE pupils

$X^{(c)}$ is a group membership vector for Comparison pupils.

The hypothesis tested for group effect was:

$\mathcal{E}$(IGE pupil average) = $\mathcal{E}$(Comparison pupil average)

The second model, used to examine the trial (changes from Fall to Spring semester) and groups - Trials interaction effects, was:

$$\mathcal{E}(Y) = a_o U + A_{I1} X^{(I1)} + a_{I2} X^{(I2)} + a_{c1} X^{(c1)} + a_{c2} X^{(c2)} + \sum_{i=1}^{n} b_i g^{(i)}$$

Where: Y is a vector of criterion scores for Fall semester and for Spring semester

U is the unit vector

$X^{(I1)}$ is a vector containing a "1" if the corresponding criterion score is for an IGE student in the Fall semester; "0" otherwise.

$X^{(I2)}$ is a vector containing a "1" if the corresponding criterion score is for an IGE student in the Spring semester; "0" otherwise.

$X^{(c1)}$ is a vector containing a "1" if the corresponding criterion score is for a comparison school student in the Fall semester; "0" otherwise.

$X^{(c2)}$ is a vector containing a "1" if the corresponding criterion score is for a Comparison school student in the Spring semester; "0" otherwise.

$Z^{(i)}$ is a group membership vector for the ith pupil with i ranging from 1 to n where n = total number of students tested.

The tested hypothesis for significant trial pre-post effect was:

$$\xi(\text{IGE Fall score}) + \xi(\text{Comparison Fall score}) = \xi(\text{IGE Spring Score}) + \xi(\text{Comparison Spring score})$$

The tested hypothesis for significant trial x groups interaction was:

$$\xi(\text{IGE Spring Score}) - \xi(\text{IGE Fall score}) = \xi(\text{Comparison Spring score}) - \xi(\text{Comparison Fall score})$$

The results of the Groups X Trials analysis for the subscale and total scores, for 3rd grade and 4th grade pupils, are displayed in Tables C-3 and C-4, respectively.

It might be noted that the mean scores in Tables C-3 and C-4 are not identical to those reported in Tables C-1 and C-2. This is because the mean scores in Tables C-3 and C-4 are based only on those pupils who completed both Fall and Spring administrations of the self-concept scale. The mean scores reported in Tables C-1 and C-2 are based on scores of these pupils plus the scores of other pupils who completed only one of the two administrations.

For 3rd grade pupils, there was no significant group effect detected for any of the subscales or for the total scale. However, there was a significant trial effect for four of the subscales (Behavior, Intellectual and School Status, Physical Appearance and Attributes, and Popularity) and also for the total scale. In each case, there was a lowering of the self-concept from Fall to Spring. For two of these

subscales with a significant trial effect, (Behavior and Physical Appearance and Attributes) there was no significant Groups x Trials effect. This indicates that for these two subscales, the decreases in self-concept for IGE pupils and for Comparison school pupils are comparable. However, for the other two subscales with a significant trials effect (Intellectual and School Status, and Popularity) and for the total scale, there is a significant Groups x Trials effect. In each of these cases the decline in self-concept, for Comparison school pupil, is considerably greater than the decline for IGE pupils.

For the 4th grade pupils there is a significant group effect for one subscale (Intellectual and School Status); with IGE pupils demonstrating an overall greater self-concept (with scores for both semesters being considered) than the Comparison School pupils. For two subscales (Intellectual and School Status, and Anxiety) there is a significant trials effect indicating an overall increase in self-concept for the Fall to Spring semesters. For two of the subscales (Intellectual and School Status, and Popularity) and for the total scale, there is a significant Groups x Trials effect. In each of these instances, the IGE pupils show a slight decrease in self-concept, while Comparison school pupils demonstrate a rather large increase in self-concept.

Differences Between IGE and Comparison School Scores for Pupils of Subpopulations

The analyses reported above pertain to pupils overall, and disregard the fact that for some particular subpopulation of students the degree to which attending an IGE school or in a Comparison school affects their self-concept might be different from the degree to which the self-concept of pupils overall is affected by attending an IGE or Comparison school. In this section, analyses are discussed which examine such a possibility.

Two such analyses are discussed in this section. The first type of analysis compares all male pupils in IGE schools with all male pupils in Comparison schools, and all female pupils in IGE schools with all female pupils in Comparison schools.

The subscale scores and total score, obtained for each semester and for each of the two grades were considered by use of the following linear model:

$$\mathcal{E}(Y) = a_o U + a_{IM} X^{(IM)} + a_{CM} X^{(CM)} + a_{IF} X^{(IF)} + a_{CF} X^{(CF)}$$

where: Y is a vector of self-concept scores on one of the subscales or total scale for all IGE and Comparison School pupils of a given grade and obtained in a given semester.

U is a unit vector

$X^{(IM)}$ is a membership vector for male IGE students

$X^{(CM)}$ is a membership vector for male Comparison students

$X^{(IF)}$ is a membership vector for female IGE students

$X^{(CF)}$ is a membership vector for female Comparison students

Two hypotheses were tested simultaneously:

$\mathcal{E}$(IGE male score) = $\mathcal{E}$(Comparison male score)

$\mathcal{E}$(IGE female score) = $\mathcal{E}$(Comparison female score)

In each case where the pair of hypotheses was rejected and where the observed means indicated that for at least one of the sexes, IGE pupils of that sex performed more poorly than did Comparison School pupils of that sex, a Scheffe' multiple comparisons test was utilized to examine one or both of the contrasts

$\mathcal{E}$(IGE male score) - $\mathcal{E}$(Comparison male score)

$\mathcal{E}$(IGE female score) - $\mathcal{E}$(Comparison female score)

For each subscale and for the total scale, the only contrasts considered in the Scheffe' test were those contrasts for which the estimated value was negative; that is, those contrasts which indicate poorer performance by IGE pupils than by Comparison school pupils.

Tables C-5 through C-8 display the summary data obtained while considering the question of whether IGE pupils of a given sex have a lesser self-concept than do Comparison school pupils of the same sex. With only one exception, the analyses uniformly indicate that for each sex, IGE pupils of the same sex and Comparison school pupils of the same sex have either equal self-concept, or the IGE pupils of the same sex have a significantly higher self-concept. The one exception involves 3rd grade pupils, on the Happiness and Satisfaction subscale used during the Fall semester. In this instance, IGE females had a significantly lower self-concept score than did Comparison school females.

Tables C-9 through C-12 display the summary data obtained while considering the question of whether IGE pupils of a given ethnicity have a lesser self-concept than do Comparison school pupils of the same ethnicity. Without exception, the analyses indicate that for each ethnicity group considered, IGE pupils of that ethnicity have equal or higher self-concept than do Comparison school pupils of the same ethnicity.

Mean Subscale and Total Scores on
the Piers-Harris Self-Concept Test for 3rd Grade Pupils
Combined IGE Schools and Combined Comparison Schools
Fall and Spring

Scale	Fall			Spring		
	IGE	Comparison	Results of Analysis[1]	IGE	Comparison	Results of Analysis[1]
Behavior	12.65	12.91	NS	11.49	10.68	NS
Intellectual School Status	12.53	13.18	NS	11.02	10.05	NS
Physical Appearance & Attribute	7.66	7.88	NS	6.64	6.02	NS
Anxiety	7.92	7.87	NS	7.25	7.02	NS
Popularity	7.30	7.36	NS	6.61	5.93	NS
Happiness & Satisfaction	6.10	6.64	*	5.60	5.53	NS
Total	53.46	55.26	NS	48.05	44.99	NS

Note 1. NS: non-significant difference at $\alpha = .05$ level
* : significant difference at $\alpha = .05$ level

Table C-1

Mean Subscale and Total Scores on
the Piers-Harris Self-Concept Test for 4th Grade Pupils
of Combined IGE Schools and Combined Comparison Schools
Fall and Spring

Scale	Fall			Spring		
	IGE	Comparison	Results of Analysis[1]	IGE	Comparison	Results of Analysis[1]
Behavior	12.38	11.66	*	11.01	11.17	NS
Intellectual School Status	12.08	10.89	*	10.68	10.68	NS
Physical Appearance & Attribute	7.01	6.86	NS	6.62	6.45	NS
Anxiety	7.63	7.42	NS	7.09	7.38	NS
Popularity	7.21	6.65	*	6.25	6.59	NS
Happiness & Satisfaction	6.44	6.23	NS	5.58	5.91	NS
Total	52.66	49.77	*	46.81	47.67	NS

Note 1. NS: non-significant difference at $\alpha = .05$ level
* : significant difference at $\alpha = .05$ level

Table C-2

Piers-Harris Self-Concept
Groups X Trials
Analysis Results
for 3rd Grade Pupils

Scale	Program	Mean Score		Results of Analyses
		Fall	Spring	
Behavior	IGE	12.96	12.90	Groups - NS Trials - *
	Comparison	13.14	12.29	Groups X Trials -NS
Intellectual and School Status	IGE	12.66	12.27	Groups - NS Trials - *
	Comparison	13.43	11.56	Groups X Trials - *
Physical Appearance & Attributes	IGE	7.96	7.37	Groups - NS Trials - *
	Comparison	7.97	6.93	Groups X Trials -NS
Anxiety	IGE	8.19	8.33	Groups - NS Trials - NS
	Comparison	8.03	8.08	Groups X Trials- NS
Popularity	IGE	7.32	7.35	Groups - NS Trials - *
	Comparison	7.48	6.82	Groups X Trials- *
Happiness and Satisfaction	IGE	6.38	6.37	Groups - NS Trials - NS
	Comparison	6.66	6.36	Groups X Trials- NS
Total	IGE	54.74	53.90	Groups - NS Trials - *
	Comparison	55.98	51.77	Groups X Trials- *

Note 1. - NS - no significant difference at $\alpha = .05$ level
* - Significant difference at $\alpha = .05$ level

Table C-3

Piers-Harris Self-Concept
Groups X Trials
Analysis Results
For 4th Grade Pupils

Scale	Program	Mean Score		Results of Analyses[1]	
		Fall	Spring		
Behavior	IGE	12.53	12.32	Groups -	NS
	Comparison	11.71	12.11	Trials -	NS
				Groups X Trials	NS
Intellectual & School Status	IGE	12.16	12.01	Groups -	*
	Comparison	10.94	11.58	Trials -	*
				Groups X Trials	*
Physical Appearance & Attributes	IGE	7.23	7.45	Groups -	NS
	Comparison	6.91	7.00	Trials -	NS
				Groups X Trials	NS
Anxiety	IGE	7.65	7.82	Groups -	NS
	Comparison	7.46	8.00	Trials -	*
				Groups X Trials	NS
Popularity	IGE	7.25	7.03	Groups -	NS
	Comparison	6.89	7.14	Trials -	NS
				Groups X Trials	*
Happiness & Satisfaction	IGE	6.48	6.28	Groups -	NS
	Comparison	6.31	6.41	Trials -	NS
				Groups X Trials	NS
Total	IGE	53.09	52.46	Groups -	NS
	Comparison	50.10	51.70	Trials -	NS
				Groups -	*

Note 1. NS - not a significant difference at $\alpha = .05$ level
* - significant difference at $\alpha = .05$ level

Table C-4

Piers-Harris Self-Concept
Sex Analysis
3rd Grade Pupils, Fall Semester

Scale	Program	Mean Score		Results of Analysis[1]	
		Males	Females	1	2
Behavior	IGE	12.51	12.65	NS	
	Comparison	12.61	13.23		
Intellectual & School Status	IGE	13.04	11.85	NS	
	Comparison	13.57	12.81		
Physical Appearance & Attributes	IGE	8.57	6.70	NS	
	Comparison	8.46	7.30		
Anxiety	IGE	8.39	7.30	NS	
	Comparison	8.25	7.47		
Popularity	IGE	7.61	6.98	NS	
	Comparison	7.50	7.22		
Happiness & Satisfaction	IGE	6.33	5.80	*	Ψ_M:NS Ψ_F:*
	Comparison	6.58	6.68		
Total	IGE	55.29	51.02	NS	
	Comparison	55.81	54.71		

Note 1. (a) Notation used in column 1, under Results of Analysis

NS - The hypothesis $\Psi_M = \Psi_F = 0$ is not rejected at $\alpha = .05$ level,
where $\Psi_M = \mathcal{E}$(IGE male scores) - $\mathcal{E}$(Comparison male scores)
$\Psi_F = \mathcal{E}$(IGE Female scores) - $\mathcal{E}$(Comparison female scores)

* The hypothesis $\Psi_M = \Psi_F = 0$ is rejected at the $\alpha = .05$ level

(b) Notation used in column 2, under Results of Analysis

Ψ_M:NS The contrast Ψ_M is not significantly different from 0 by Scheffe' Multiple Comparisons Test at $\alpha = .05$ level.

Ψ_M:* The contrast Ψ_M is significantly different from 0 by Scheffe' Multiple Comparisons Test at $\alpha = .05$ level.

Ψ_F:NS Same as Ψ_M: NS, except using the contrast Ψ_F

Ψ_F:* Same as Ψ_M:*, except using the contrast Ψ_F

If one of the contrasts, Ψ_F or Ψ_M is not mentioned, that contrast was not considered in the Scheffe' test.

If neither of the contrasts Ψ_F or Ψ_M are mentioned, the Scheffe' test was not performed.

Table C - 5

Piers-Harris Self-Concept
Sex Analysis
4th Grade Pupils, Fall Semester

Scale	Program	Mean Score		Results of Analysis[1]	
		Males	Females	1	2
Behavior	IGE	12.09	12.68	NS	
	Comparison	11.29	12.08		
Intellectual & School Status	IGE	12.24	11.87	*	
	Comparison	10.78	11.03		
Physical Appearance & Attributes	IGE	7.56	6.33	NS	
	Comparison	7.17	6.57		
Anxiety	IGE	8.35	6.76	NS	
	Comparison	7.69	7.14		
Popularity	IGE	7.49	6.86	*	
	Comparison	6.80	6.50		
Happiness & Satisfaction	IGE	6.62	6.21	NS	
	Comparison	6.17	6.29		
Total	IGE	53.77	51.17	*	
	Comparison	49.43	50.24		

Note 1. See Note 1(a), Table C-5, for a discussion of the notation used in column 1. See Note 1(b), Table C-5, for a discussion of the notation used in column 2.

Table C-6

Piers-Harris Self-Concept
Sex Analysis
3rd Grade Pupils, Spring Semester

Scale	Program	Mean Score		Results of Analysis[1]	
		Males	Females	1	2
Behavior	IGE	11.00	11.87	NS	
	Comparison	10.71	10.77		
Intellectual & School Status	IGE	11.18	10.62	NS	
	Comparison	10.81	9.42		
Physical Appearance & Attributes	IGE	7.22	5.89	NS	
	Comparison	6.53	5.60		
Anxiety	IGE	7.46	6.78	NS	
	Comparison	7.70	6.44		
Popularity	IGE	6.80	6.30	NS	
	Comparison	6.45	5.49		
Happiness & Satisfaction	IGE	5.91	5.11	NS	
	Comparison	5.84	5.29		
Total	IGE	48.62	46.36	NS	
	Comparison	47.30	43.25		

Note 1. See Note 1(a), Table C-5, for a discussion of the notation used in column 1. See Note 1(b), Table C-5, for a discussion of the notation used in column 2.

Table C-7

Pier-Harris Self-Concept
Sex Analysis
4th Grade Pupils, Spring Semester

Scale	Program	Mean Score		Results of Analysis[1]	
		Males	Females	1	2
Behavior	IGE	10.48	11.52	NS	
	Comparison	10.85	11.56		
Intellectual & School Status	IGE	10.42	10.88	NS	
	Comparison	10.84	10.48		
Physical Appearance & Attributes	IGE	6.81	6.35	NS	
	Comparison	6.84	6.01		
Anxiety	IGE	7.34	6.76	NS	
	Comparison	7.69	7.03		
Popularity	IGE	6.44	6.01	NS	
	Comparison	6.79	6.35		
Happiness & Satisfaction	IGE	5.50	5.63	NS	
	Comparison	5.81	6.02		
Total	IGE	46.31	47.04	NS	
	Comparison	48.09	47.16		

Note 1. See Note 1(a), Table C-5 for a discussion of the notation used in column 1. See Note 1(b), Table C-5, for a discussion of the notation used in column 2.

Table C-8

Piers-Harris Self-Concept
Ethnicity Analysis
4th Grade Pupils, Fall Semester

Scale	Program	Mean Score			Results of Analysis[1]	
		White	Black	M.A.	1	2
Behavior	IGE	12.79	12.50	12.20	NS	
	Comparison	11.65	11.68	11.66		
Intellectual and School Status	IGE	11.36	12.64	11.82	*	
	Comparison	11.11	11.60	10.31		
Physical Appearance & Attributes	IGE	5.84	7.26	7.01	*	Ψ_{WH}:NS Ψ_{BL}:NS
	Comparison	6.79	7.91	6.11		
Anxiety	IGE	7.58	7.42	7.72	NS	
	Comparison	8.00	7.08	7.53		
Popularity	IGE	6.95	7.27	7.19	NS	
	Comparison	6.28	6.83	6.63		
Happiness & Satisfaction	IGE	6.79	6.45	6.33	NS	
	Comparison	6.05	6.37	6.16		
Total	IGE	52.32	53.35	52.04	NS	
	Comparison	49.32	51.35	48.77		

Note 1. See Note 1(a), Table C-9 for a discussion of the notation used in column 1. See Note 1(b), Table C-9, for a discussion of the notation used in column 2.

Table C-10

Piers-Harris Self-Concept
Ethnicity Analysis
3rd Grade Pupils, Fall Semester

Scale	Program	Mean Score			Results of Analysis[1]	
		White	Black	M.A.	1	2
Behavior	IGE	13.40	11.79	12.47	NS	
	Comparison	12.36	12.92	13.08		
Intellectual and School Status	IGE	12.87	13.00	12.36	NS	
	Comparison	12.75	13.08	13.32		
Physical Appearance & Attributes	IGE	7.47	7.40	7.74	NS	
	Comparison	8.08	7.75	7.83		
Anxiety	IGE	9.13	8.80	7.57	*	ψ_{MA}:NS
	Comparison	6.75	7.83	8.18		
Popularity	IGE	8.47	7.40	7.08	NS	
	Comparison	7.11	7.58	7.41		
Happiness & Satisfaction	IGE	6.47	5.20	6.07	NS	
	Comparison	6.39	5.91	6.76		
Total	IGE	57.40	54.61	52.38	NS	
	Comparison	52.86	53.66	56.09		

Note 1. (a) Notation used in column 1, under Results of Analysis
NS - the hypothesis $\psi_{WH} = \psi_{BL} = \psi_{MA} = 0$ is not rejected at $\alpha = .05$ level,
where $\psi_{WH} = \xi$(IGE White score) - ξ(Comparison White score)

$\psi_{BL} = \xi$(IGE Black score) - ξ(Comparison Black score)

$\psi_{MA} = \xi$(IGE Mexican-American score) - ξ(Comparison Mexican-American score)

* - The hypothesis $\psi_{WH} = \psi_{BL} = \psi_{MA} = 0$ is rejected at $\alpha = .05$ level.

(b) Notation used in column 2, under Results of Analysis

ψ_{WH}:NS - The contrast ψ_{WH} is not significantly different from 0 by Scheffe' Multiple Comparisons Test at $\alpha = .05$ level.

ψ_{WH}:* - The contrast ψ_{WH} is significantly different from 0, by Scheffe' Multiple Comparisons Test at $\alpha = .05$ level.

ψ_{BL}:NS -Same as ψ_{WH}:NS, except using the contrast ψ_{BL}

ψ_{BL}:* - Same as ψ_{WH}:*, except using the contrast ψ_{BL}

ψ_{MA}:NS -Same as ψ_{WH}:NS, except using the contrast ψ_{MA}

ψ_{MA}:* - Same as ψ_{WH}:*, except using the contrast ψ_{MA}

Table C-9

Piers-Harris Self-Concept
Ethnicity Analysis
3rd Grade Pupils, Spring Semester

Scale	Program	Mean Score			Results of Analysis[1]	
		White	Black	M.A.	1	2
Behavior	IGE	10.59	11.60	11.52	NS	
	Comparison	7.17	10.92	11.77		
Intellectual and School Status	IGE	9.83	11.60	11.08	NS	
	Comparison	6.63	9.42	11.19		
Physical Appearance & Attributes	IGE	6.17	7.80	6.61	NS	
	Comparison	4.29	6.25	6.56		
Anxiety	IGE	6.50	10.00	7.06	*	ψ_{MA}:NS
	Comparison	4.49	7.00	7.82		
Popularity	IGE	5.33	7.40	6.74	NS	
	Comparison	4.11	7.00	6.40		
Happiness & Satisfaction	IGE	5.25	7.20	5.48	NS	
	Comparison	3.89	5.42	6.07		
Total	IGE	43.18	54.82	47.86	NS	
	Comparison	30.11	46.42	49.56		

Note 1. See Note 1(a), Table C-9 for a discussion of the notation used in column 1. See Note 1(b), Table C-9, for a discussion of the notation used in column 2.

Table C-11

Piers-Harris Self-Concept
Ethnicity Analysis
4th Grade Pupils, Spring Semester

Scale	Program	Mean Scores			Results of Analysis[1]	
		White	Black	M.A.	1	2
Behavior	IGE	9.45	11.47	11.00	NS	
	Comparison	10.17	11.65	11.10		
Intellectual and School Status	IGE	9.37	12.09	9.99	NS	
	Comparison	10.57	11.78	9.83		
Physical Appearance & Attributes	IGE	6.14	7.42	6.14	NS	
	Comparison	6.05	7.42	5.79		
Anxiety	IGE	5.91	7.38	7.11	NS	
	Comparison	6.93	7.40	7.47		
Popularity	IGE	5.59	7.03	5.85	NS	
	Comparison	6.24	7.07	6.30		
Happiness & Satisfaction	IGE	5.46	5.79	5.44	NS	
	Comparison	5.48	6.40	5.65		
Total	IGE	42.05	50.23	45.37	NS	
	Comparison	44.28	50.89	46.02		

Note 1. See Note 1(a), Table C-9 for a discussion of the notation used in column 1. See Note 1(b), Table C-9, for a discussion of the notation used in column 2.

Table C-12

APPENDIX D

INSTRUMENT REPORT

DISCIPLINE REPORT

Date/Period of Administration: 1973-1974 school year
Population: Students who were disciplined - as reported by principals and/or teachers.
Administered by: Department of Student Development
Data Collected by: Department of Student Development

Individually Guided Education (IGE) Program
Discipline Report

Data on discipline was collected by the Department of Student Development for the 1973-1974 school year. The schools were asked to list the discipline actions that they have taken into five separate categories:

1. Corporal Punishment
2. Parent Conferences
3. Staying After School
4. Short-term Suspensions
5. Student Conferences

In each category, they were to list the number of instances in which misbehavior had occurred and the number of students involved. This was to be further subdivided by the sex and ethnicity of the students. These reports were to be made separately for each grade and then for each semester.

In reviewing the discipline reports submitted by the eleven IGE schools and the eleven Comparison schools, the following possible discrepancies were found.

1. Some schools reported only those disciplinary actions which were taken by the principal. Other schools indicated that the report was sent to the teachers and that they filled it out.
2. Some schools stated that their responses were only estimations.
3. Some schools only marked one scale - number of instances or number of students - instead of both. It is impossible to deduce from one response the accurate response for the other.
4. One school combined Kindergarten and First Grade into one report. Another school combined the Second and Third Grades into one report and then the Fourth and Fifth Grades into one report.
5. Several schools did not report exact numbers, but only such phrases such as "many," "several," "daily conferences with these students," "continually for students involved," or "done individually to the entire class - impossible to estimate."

6. Some reports for specific categories within grades were missing. Some reports for entire grades were missing. One school in the fall and three schools in the spring were missing.
7. Two schools did not fill out the report for each grade, but only for the school as a whole.
8. Some schools separated students who are in special education classes. Other schools did not mention this one way or the other. It is impossible to conclude whether they were included in the reports or disregarded.
9. One school's responses are exactly the same for each of the five different categories of actions. This is probably incorrect.
10. Either the schools had no uniform way of disciplining students or had no uniform way of filling out this form. Thus, there is a fairly large variation in some categories between schools. For example, for the year, one school responded that they had 27 student conferences, another school 10,257 student conferences.

Because of the reasons listed above, reliable comparisons between the two types of schools cannot be done. Therefore, this data has not been analyzed for the IGE evaluation.

Appendix E

California Achievement Test

Date/Period of Administration:	January 1974
Population:	All students in Grades 2,4,6
Administered by:	Teachers
Data Collected by:	Department of Student Development

Description of
California Achievement Test

To whom was the test administered?
All 2nd Grade, 4th Grade, and 6th Grade Students

When was the test administered?
January 1974

How many administrations were given?
One per Student

Where was the test administered?
In the Classrooms

Who administered the test?
Teachers

Are there any problems with the administration which might affect the validity of the data?
It is probable that the standardized administration procedures were not adhered to in all cases.

Brief Description of the Test:
The California Achievement Test is a norm-referenced test battery. Two of the tests, Mathematics and Verbal/Comprehension were administered.

Is the test standardized?
Standard administration instructions are provided in the Test Manual.

Reliability and Validity Data:
The reliability of both the Mathematics and the Verbal/Comprehension Tests, as summarized by Kuder-Richardson Formula 20 coefficients, is acceptable. Coefficients for different nation-wide samples range generally from 0.93 to 0.96. The available test manuals do not provide any validity data.

Appendix E

Analysis of California Achievement Test Scores

In February 1974 the California Achievement Test (CAT) was administered to all 2nd grade and 4th grade pupils of IGE schools and Comparison schools, except Brooke and Zavala Elementary Schools. Two CAT subtests were examined for the IGE evaluation: The Verbal and Comprehension reading subtest and the Mathematics subtest.

Differences in Achievement between IGE Pupils and Comparison School Pupils

Examination of scores for 2nd grade IGE pupils and 2nd grade Comparison school pupils did not reveal any significant differences on either of the two subtests. For 4th grade pupils, however, IGE pupils have significantly smaller mean scores than Comparison school pupils on both subtests. Table E-1 displays the summary data for analyses performed.

Data did not exist with which a statistical assessment could be made of the gain realized by individual IGE pupils and Comparison school pupils. However, an informal, non-statistical assessment was made by considering, for these schools, the Metropolitan Achievement Test (MAT) scores obtained two years previously, in 1971, prior to inauguration of the IGE program. For both 2nd grade pupils and 4th grade pupils who were administered the MAT in 1971, there were no significant differences, on any subscale, between pupils attending what are now IGE schools and pupils attending what are now Comparison schools. The summary data regarding these analyses are displayed in Table E-2. It is reasonable to compare the 1971 MAT results to the CAT results of the current year only if it may be assumed that there were no changes in those two years in any of the IGE or Comparison schools in the quality of students or teaching faculty.

Further Examination of CAT Scores

Some IGE schools chose to implement IGE procedures primarily in the area of language arts, other in mathematics, and some in subjects varying by units within the school. It appears appropriate to examine achievement in the areas of concentration and this has been done in the following pages. However, it must be remembered that when the number of schools examined is small, generalization of results are quite limited; the results as a whole must be regarded only as possibly indicative and not as absolutely valid. Errors due to mismatching are more likely to be balanced over all 11 pairs of IGE and Comparison schools than over only five pairs of IGE and Comparison schools.

It also appears appropriate to mention here that the procedures by which the CAT are administered and scored appear to vary considerably from school to school and class to class. Therefore, the reliability of test scores used in this report are themselves subject to considerable question.

Differences in Achievement between IGE pupils attending Reading/Language Arts-Oriented IGE Schools and Pupils Attending Matched Comparison Schools

Five of the IGE schools employ IGE procedures only during Reading/Language Arts instruction. For reasons noted in the preceding section, it is appropriate to consider performance of pupils in only these five schools, as compared with pupil performance in the matched Comparison schools. Pupil performance on the Verbal/Comprehension scale, for pupils in the Reading/Language Arts IGE schools was significantly greater than pupil performance for pupils in the Comparison schools that were matched to these Reading/Language Arts IGE schools. This was true for 2nd grade pupils and also for 4th grade pupils. Table E-3 provides the relevant data regarding pupil performance on the CAT Verbal/Comprehension scale.

However, there is no clear interpretation of these results. An examination of Table E-3 indicates that for 2nd grade pupils, pupil performance on the mathematics subscale for Reading/Language Arts-oriented IGE schools is significantly better than pupil performance on this subscale for Comparison schools. At least two possible conclusions are suggested by this fact: (1) The Reading/Language Arts-oriented IGE schools have higher achieving pupils than do the matched comparison schools not because of the impact of IGE instruction, but because the Comparison schools selected had pupils of a lesser ability as a result of faulty matching, (2) Alternatively, it may be true that concentration on reading/language arts in an IGE situation results in higher mathematics achievement as well as reading achievement.

It should be noted that although an attempt was made to obtain, for each IGE school, a Comparison school that was as closely matched as possible (with regard to geographical location of school, student body size, and student body ethnicity composition), no such matching can ever result in completely comparable schools. This is especially true when only five Reading/Language Arts schools are to be matched since the chances are increased that one such mismatching can drastically affect the results of any comparison of the IGE with the Comparison schools.

To answer the question of possible mismatching of the Reading/Language Arts IGE schools, the MAT scores in 1971 for scales relating to Reading/Language Arts were considered. For both 2nd and 4th grades, there were no significant differences between pupil performance in these scales in Reading/Language Arts schools and in the corresponding matched Comparison schools. Table E-4 provides the relevant data regarding pupil performance in these scales. This implies that if these IGE and Comparison schools were basically unchanged for 1971 to 1974, the greater pupil performance in Reading/Language Arts IGE schools is due to the IGE implementation in their schools.

Differences in Achievement between IGE Pupils Attending Mathematics Oriented Schools and Pupils Attending Comparison Schools

Three of the IGE schools employ IGE procedures only during mathematics instruction. For reasons noted previously, it is appropriate to consider performance of pupils in only these IGE schools as compared with performance of pupils in the matched comparison schools. However, pupil performance on the Mathematics subtest for Mathematics-IGE schools was significantly less than pupil performance on the mathematics subtest for pupils in the Comparison schools that were matched with the Mathematics IGE schools. This is true for 2nd grade pupils and also for 4th grade pupils. Table E-5 displays the relevant data regarding pupil performance on the CAT Mathematics subtest.

As was the case in the previous section, there is no clear interpretation of these results. An inspection of Table E-5 reveals that pupils in the Mathematics-oriented IGE schools also had a poorer performance than did pupils of the Comparison Schools on the CAT Verbal and Comprehension subtest. At least two possible conclusions are suggested by these results: (1) IGE pupil performance was poorer because of a faulty matching procedure which resulted in obtaining three Comparison schools where students were superior to those in the three IGE schools; and (2) IGE instruction in mathematics is not as effective as traditional instruction.

To consider the question of possible faulty matching, the Mathematics subscales of the Metropolitan Achievement Test (MAT), administered in 1971, were considered. This test was administered prior to the official inauguration of the IGE program in the Austin Independent School District.

Pupil performance in Mathematics-IGE schools, on the MAT Mathematics subtest (for 2nd grade) and for the MAT Computation and Problem-Solving Scales (for 4th grade) were not significantly different from pupil performance in the Comparison schools with one exception: The 4th grade pupil's performance on the Problem-Solving Scale for Mathematics-IGE schools was significantly higher than the 4th grade pupils performance for Comparison schools. Table E-6 provides the relevant data regarding pupil performance on these MAT scales.

CAT (1974) Results

For pupils enrolled in IGE Schools
and pupils enrolled in Comparison Schools

Subscale	Means for 2nd grade [1]		Results of Analysis [3]	Means for 4th grade [2]		Results of Analysis [3]
	IGE	Comparison		IGE	Comparison	
Verbal and Comprehension	51.26	52.02	NS	39.72	41.76	*
Mathematics	64.97	65.44	NS	48.91	52.46	*

Note 1. Does not include 3 IGE schools and 3 matched Comparison Schools. One IGE school did not administer the CAT at the same time that the other schools did; results on this school are therefore not compatible with other results. A second IGE school does not have a 2nd grade, and the third IGE school did not turn in test data for analyses.

Note 2. Does not include one IGE school (which administered the CAT at a different time and whose results are not usable, for reasons observed in Note 1) and the matched Comparison school.

Note 3. Each pair of subscale means was analyzed by use of a t-test.

NS - no significant differences at $\alpha = .05$ level
* - significant differences at $\alpha = .05$ level

Table E-1

MAT (1971) Results

For Pupils Enrolled in What Are Now IGE Schools
and Pupils Enrolled in Matched Comparison Schools

Subscale	Means for 2nd Grade [1] (Grade Equivalent)		Results of [3] Analysis	Means for 4th Grade [2] (Grade Equivalent)		Results of [3] Analysis
	IGE	Comparison		IGE	Comparison	
Word Knowledge	2.39	2.36	NS	4.49	4.44	NS
Word Discrimination	2.66	2.70	NS	4.44	4.33	NS
Reading	2.32	2.35	NS	4.30	4.28	NS
Arithmetic [4]	2.32	2.35	NS			
Computation [5]				3.87	3.94	NS
Problem-Solving [5]				3.96	3.82	NS

Note 1. Does not include data for pupils in three IGE and three Comparison Schools. Schools excluded are those indicated in Note 1, Table 1.

Note 2. Does not include data for pupils in one IGE and one Comparison School. Schools excluded are those indicated in Note 2, Table 1.

Note 3. Each pair of subscale means were analyzed by use of a t-test
NS - no significant difference at $\alpha = .05$ level
* - significant difference at $\alpha = .05$ level

Note 4. Arithmetic subscale not included in 4th grade level of test

Note 5. Computation and Problem-Solving subscales not included in 2nd grade level of test.

Table E-2

CAT (1974) Results

For Pupils Enrolled in Reading/Language Arts-oriented IGE Schools and for Pupils in Matched Comparison Schools

Subscale	Means for 2nd Grade[1]		Results of Analysis[3]	Means for 4th Grade[2]		Results of Analysis[3]
	IGE	Comparison		IGE	Comparison	
Verbal and Comprehension	60.34	52.33	*	41.23	38.61	*
Mathematics	71.22	63.06	*	49.57	49.19	NS

Note 1. Does not include data for pupils in two Reading/Language Arts-oriented IGE schools as for pupils in matched comparison schools. One IGE school does not have a second grade; the other excluded IGE school administered the CAT during a different time, so results for this school are not compatible with results obtained from other schools.

Note 2. Does not include data for pupils of one Reading/Language Arts-oriented IGE school and for the matched Comparison School. The excluded IGE school administered the CAT during a different time, so results of this school are not compatible with results obtained from other schools.

Note 3. Each pair of subscale means was analyzed be use of a t-test.
NS - no significant differences at $\alpha = .05$ level
* - significant differences at $\alpha = .05$ level

Table E-3

MAT (1971) Results

For Pupils Enrolled in what are now Reading/Language Arts-Oriented IGE Schools and Pupils in Matched Comparison Schools

Subscale	Means for 2nd Grade (Grade Equivalent)		Results of Analysis[3]	Means for 4th Grade[2] (Grade Equivalent)		Results of Analysis[3]
	IGE	Comparison		IGE	Comparison	
Word Knowledge	2.54	2.32	NS	4.46	3.97	NS
Word Discrimination	2.84	2.54	NS	4.36	4.00	NS
Reading	2.51	2.32	NS	4.27	3.92	NS
Arithmetic[4]	2.34	2.35	NS			
Computation[5]				3.79	3.76	NS
Problem Solving[5]				3.83	3.70	NS

Note 1. Includes only data considered for 2nd grade CAT study repeated in Table 5

Note 2. Includes only data considered for 4th grade CAT study reported in Table 5

Note 3. Each pair of subscale means was analyzed by use of a t-test

NS - no significant difference at $\alpha = .05$ level

Note 4. Arithmetic subscale not included in 4th grade level of test

Note 5. Computation and Problem-Solving subscales not included in 2nd grade level of test.

Table E-4

CAT (1974) Results

For Pupils in Mathematics-oriented IGE Schools
and Pupils in Matched Comparison Schools

Subscale	Means for 2nd Grade [1]		Results of Analysis [3]	Means for 4th Grade [2]		Results of Analysis
	IGE	Comparison		IGE	Comparison	
Verbal and Comprehension	52.80	63.79	*	43.84	51.32	*
Mathematics	63.90	78.37	*	55.24	62.68	*

Note 1. Does not include data for pupils in one Mathematics-oriented IGE School (for which scole were not available) and for pupils in matched Comparison School.

Note 2. Includes data for pupils of all Mathematics-oriented IGE Schools and for pupils of all matched Comparison Schools.

Note 3. Each pair of subscale means was analyzed by use of a t-test.
NS - no significant difference at α = .05 level
* - significant difference at α = .05 level

Table E-5

MAT (1971) Results

For Pupils enrolled in what are now Mathematics-oriented IGE Schools and Pupils enrolled in Matched Comparison Schools.

Subscale	2nd Grade Means [1] (Grade Equivalent)		Results of [3] Analysis	4th Grade Means [2] (Grade Equivalent)		Results of [3] Analysis
	IGE	Comparison		IGE	Comparison	
Word Knowledge	2.53	2.92	NS	5.10	5.17	NS
Word Discrimination	2.84	3.16	NS	5.06	4.89	NS
Reading	2.42	2.91	NS	4.88	5.01	NS
Arithmetic [4]	2.48	2.72	NS			
Computation [5]				4.16	4.21	NS
Problem-Solving [5]				4.45	3.99	*

Note 1. Includes only data considered for 2nd grade CAT study reported in Table 3

Note 2. Includes data for all schools now classified as Mathematics-oriented IGE schools and matched Comparison Schools.

Note 3. Each pair of subscale means was analyzed by use of a t-test.
NS - no significant difference at α = .05 level
* - significant difference at α = .05 level

Note 4. Arithmetic subscale not included in 4th grade level of test

Note 5. Computation and Problem-Solving subscales not included in 2nd grade level of test

Table E-6

APPENDIX G

INSTRUMENT REPORT

TEACHER QUESTIONNAIRE REPORT

Date/Period of Administration: October - November, 1973
Population: Teachers in the eleven IGE schools and the eleven Comparison schools. Out of the 209 teachers in the IGE schools, 194 completed the questionnaire (93%). Out of 240 teachers in the Comparison schools, 212 completed the questionnaire (88%). This questionnaire was also sent to other personnel in the schools such as learning coordinators, guidance counselors, special education teachers, librarians, and others. It was also sent to other schools which were involved in other projects. This report, however, will deal only with the responses of the teachers in the IGE and Comparison schools.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

DESCRIPTION OF THE TEACHER QUESTIONNAIRE

How many administrations of the instrument were there?

One

Where was it administered?

In the schools

Were there any problems with the measure or with the administration which might affect the validity of the data?

The instrument is a self-report inventory so the validity of the instrument is limited to the extent to which the respondents' perceptions were correct. There might have also been a lack of familiarity with the individualization processes by the respondents resulting in an over-rating of the degree of individualziation that exists.

Brief description of the instrument

There were 124 items on the questionnaire. Of these, items 1-55, 89-91, and 119-124 were concerned with aspects of the IGE Program. These items were grouped together so as to relate to a specific aspect of individualization.

What was the rationale for the instrument?

To obtain the teachers' views on various aspects of the IGE Program

Who developed the instrument?

Staff of the Office of Evaluation

How was the instrument developed?

From the Observation Checklist with which it was to correlate. Other questions were also added by the staff.

Is the intrument standardized?

No

Is there any information regarding the reliability and validity of the instrument?

No

TEACHER QUESTIONNAIRE REPORT

ABSTRACT

The teacher questionnaire, which was sent out in the fall of 1973, was designed as one measure of achievement of the ten objectives which are shown blocked on the following two pages. Each of the objectives corresponds to a subscale (a group of related items) on the questionnaire. It should also be noted that other Instrument Reports also pertain to some of the objectives analyzed in this report. The results of each of these reports should be considered together.

Statistical tests were run to determine if there were significant differences between the responses made by the IGE teachers and those made by Comparison school teachers. Statistically significant distribution differences (based on t-tests) are found in favor of the IGE schools in the five following subscales:

Variety of Grouping
Differentiated Tutoring
Balanced Teacher-Pupil Assignments
Information Sharing
Professional Development

See Figure 2. There are no subscales which show a significant difference in favor of the Comparison schools. The other subscales show slight, or non-significant, differences. Two of these subscales, Variety of Instructional Materials and Differentiated Assignments, slightly favor the IGE schools, and two of them, Pupil Autonomy and Classroom Cooperation, slightly favor the Comparison schools. See Figure 3.

Specific item responses also show that statistically significant differences occur. There are ten items which show the difference favoring the IGE schools. No items are significantly different in

TABLE G-1

Subscales and the Objectives to which They Are Related

SUBSCALES	OBJECTIVES
I. Variety of Grouping (Items 1-7, excluding 6)	Effective Use of Interclass Grouping (Affective and Cognitive Process Objective 1
II. Variety of Instructional Materials (Items 8-17)	Use of a Variety of Instructional Materials (Affective and Cognitive Process Objective 2)
III. Pupil Autonomy (Items 18-23)	Increased Independence in Student Learning Behaviors (Affective and Cognitive Outcome Objective 1)
IV. Differentiated Assignments (Items 24-27)	Differentiated Student Assignments (Affective and Cognitive Process Objective 3)
V. Differentiated Tutoring (Items 28-33)	Differentiated Tutoring (Affective and Cognitive Process Objective 4)
VI. Classroom Cooperation (Items 34-37)	Effective Disciplinary Procedures (Affective and Cognitive Process Objective 5)
VII. Balanced Teacher-Pupil Assignments (Items 38-39)	Balanced Assignments of Students and Teachers to Units (Affective and Cognitive Input Objective 1)
VIII. Information Sharing (Items 40-43)	Information Sharing (Affective and Cognitive Input Objective 2)
IX. Professional Development (Items 44-48)	Professional Development (Affective and Cognitive Input 3)
X. Additional Training Needs (Items 49-55)	Additional Training (Affective and Cognitive Input Objective 4)
XI. Support Levels (Items 90-91, 119-124)	Additional Training (Affective and Cognitive Input Objective 4)

TABLE G-2

PROGRAM OBJECTIVES OVERVIEW

Needs	Outcome Objectives	Process Objectives	Input Objectives	Context Description
Not documented	Affective 1. Increased positive attitude by students toward school 2. Improved social and emotional adjustment by students 3. Increased independence in student learning behaviors	Affective (All of the following process objectives are applicable for each of the outcome objectives in the affective domain.) 1. Effective use of interclass grouping 2. Use of a variety of instructional materials 3. Differentiated student assignments 4. Differentiated tutoring 5. Effective disciplinary procedures 6. Effective process implementation 7. Effective parental support	Affective (All of the following input objectives are applicable for each of the outcome objectives in the affective domain.) 1. Balanced assignment of students and teacher to units 2. Information-sharing 3. Professional development 4. Additional training 5. Communication with parents	Not documented
	Cognitive 4. Increased student achievement	Cognitive (All of the following process objectives are applicable for each of the outcome objectives in the cognitive domain.) 1. Effective use of interclass grouping 2. Use of a variety of instructional materials 3. Differentiated student assignments 4. Differentiated tutoring 5. Effective disciplinary procedures 6. Effective process implementation 7. Effective parental support	Cognitive (All of the following input objectives are applicable for each of the outcome objectives in the cognitive domain.) 1. Balanced assignment of students and teacher to units 2. Information-sharing 3. Professional development 4. Additional training 5. Communication with parents	

favor of the Comparison schools. Six other items also show a significant difference between the responses made by IGE teachers and Comparison school teachers, but the data does not suggest a clear interpretation as to whether this difference is favorable to the IGE schools or to the Comparison schools. These analyses were done by chi-square tests.

This questionnaire also shows that the teachers in the IGE schools are definitely displeased concerning the help and materials that they have been receiving. Some IGE teachers also show a relatively low level of understanding the IGE Program. See Figures 4 and 5. These two factors may help to explain why the evidence given by the teachers indicates that not all of the objectives have been attained.

DISCUSSION

This questionnaire was sent to all of the teachers in the eleven IGE and the eleven Comparison schools. 88% of the Comparison school teachers completed the questionnaire and 93% of the IGE teachers completed it.

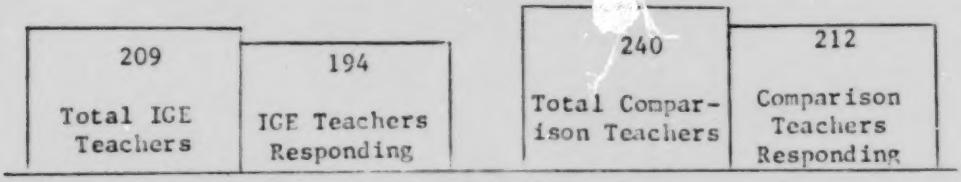


FIGURE G-1
RESPONSE LEVELS

In this report only the items which concern the IGE Program (items 1-55, 89-91, and 119-124) will be examined. The other items on the questionnaire pertain to other programs. Appendix A of this report contains a description of the questionnaire subscales that are relevant to the IGE Program, the average responses made by the IGE teachers,

and the average responses made by the Comparison school teachers. Appendix B contains the same information except that it is for the individual item responses. These two appendices should thus be referred to continually while reading this report.

Each subscale on the questionnaire consists of several items. The items were grouped together so that each subscale would correspond to a specific objective. Five subscales show statistically significant distribution differences in favor of the IGE schools. Thus, the evidence indicates that these five objectives have been attained. The other subscales do not show any significant differences.

The first seven subscales concern the teacher-pupil relationship in the classroom. The IGE teachers respond in a significantly favorable manner in regard to the following three subscales: Variety of Grouping (subscale I), Differentiated Tutoring (subscale V), and Balanced Assignments of Teachers and Pupil to Units (subscale VII). See Figure 2. There is also a slight, or non-significant, difference in favor of the IGE schools for the Variety of Instructional Materials subscale (II) and for the Differentiated Student Assignment subscale (IV). See Figure 3. The IGE teachers believe that they have a significantly greater flexibility and variety in their grouping of students. The one item in this subscale which shows a significant difference deals with the variations in group size (item 4). The entire subscale concerning the amount and variety of tutoring also shows a significant difference toward the IGE schools. One item in this subscale - use of resource persons tutoring students (item 29) - is significant in favor of the IGE schools. One other item - the coordination of tutoring by the teacher (item 33) - is also significant, but it is not clear

in which direction it is significant. In the subscale which concerns the achievement of a balance in characteristics of students in a unit and the balance of characteristics of teachers in a unit, a significant difference is once again found in favor of the IGE schools. This balance is thought to be a prerequisite for the facilitation of grouping and other individualization procdeures. The other two subscales, Variety of Instrutional Materials and Differentiated Assignments, show a slight difference toward the IGE schools. There are, however, three items in these subscales which do reveal significant differences toward the IGE schools: first, the item concerning the number of subjects for which several different textbooks are used (item 8); second, the item showing the use of self-scoring materials (item 15); and third, the item which deals with the variations in assignments for students (item 24). Each of these items deals with an aspect of individualization. The item which concerns the use of self-scoring materials, for example, also throws light on the amount of responsibility which the students in the IGE schools are given. These two subscales which are concerned with the variety of instructional materials and the use of different methods in student assignments reveal a tendency in favor of the IGE schools, but the difference is not significant. In the three subscales which do show significant differences in favor of the IGE schools, the evidence shows that the IGE teachers do see their classes as succeeding at these aspects of individualization: variety of grouping, differentiated tutoring of students, and balanced assignment of teachers and pupils to the units.

Of the other two subscales associated with the teacher-pupil

relationship, the subscales scores concerned with Pupil Autonomy and Classroom Cooperation show a slight, or non-significant, difference toward the Comparison schools. See Figure 3. There are two items which do show a significant difference, but it is not clear as to which direction they are significant. The first is the item which deals with instructional objectives (item 19) and the second is the item dealing with the evaluation of pupil achievement(item 22). One possible explanation for the fact that these two differences do not provide a clear interpretation is that the scale for these two items is somewhat misleading. The highest rating should not be "student directed" but should be a balance of teacher and student-directed. A reason for the fact that the Pupil Autonomy subscale does not come out in favor of the IGE schools may be that in the fall of the year, the IGE teachers must acquaint their students with the initially complex procedures that will ultimately lead to student understanding and responsibility for their learning. Thus, in the fall, which is when these responses were given, the processes described by these items are slightly more teacher-directed than student-directed. It should also be noted that for such items as long-range and short-range planning, instructional objectives, evaluation of pupil achievement, and effective use of time, both IGE and Comparison school teachers respond that these activities are more teacher-directed than student-directed. These results present evidence which at least partially counters the criticism that students in school can do as they wish without any direction or guidance from the teacher. In conclusion, these two subscales do not show any significant differences, and in the analysis of specific

item responses, the results are complex and somewhat contradictory.

One probable reason that the IGE teachers do not respond consistently in a significantly different manner than the teachers in Comparison schools is that the IGE teachers think that the support for the IGE Program has definitely been inadequate. In particular, low ratings were given the helpfulness of the people in the IGE Program (item 90), the adequacy of materials provided for the IGE Program (item 91), and the amount of service given by the Region XIII elementary facilitators (items 119-124). See Figures 4 and 5. These items pertain to the subscale concerning the level of support that the IGE Program has had. The corresponding objective is that additional training has been given to the teachers in an adequate manner so that they can implement individualization in their classes. The evidence shown by the responses of the IGE teachers indicates that they do not think that the training and help were sufficient. An obvious area of need of the IGE Program is greater official AISD support. It is also important to note that responses made by the IGE teachers to the following item:

> I understand what the IGE Program is all about (item 89).

The results show that 4% of the teachers in the IGE schools do not understand it at all; that 7% probably do not understand it; and that 16% only partially understand it. Thus, 27% of the teachers in the IGE schools express some degree of lack of understanding of the program that they are supposed to be implementing. This factor may have also influenced the low teacher perception on some of the aspects

of program implementation examined in this report. In other words, this factor, along with the factor of teacher perception of low official program support, may have produced reduced ratings on other items. This may help to explain why the evidence given by the IGE teachers reveals that they believe that some of the objectives of the program have been achieved, but that others have not been achieved.

The other two subscales, Information Sharing and Professional Development, are concerned with the teacher's relationship to other professionals. These two subscales both show a statistically significant distribution difference in favor of the IGE schools. See Figure 2. Five items are also significant in favor of the IGE schools. First, IGE teachers believe that they share information about individual pupils more often than Comparison school teachers do (item 41). Secondly, IGE teachers think that they are more aware of one another's classroom activities (item 42). Third, IGE teachers report that multi-classroom problems are resolved more often through a cooperative decision-making process than in Comparison schools (item 43). Fourth, the IGE teachers respond that their fellow teachers aid and encourage their professional development more often than those in Comparison schools (item 44). Fifth, the instructional programs in the IGE schools are believed by the IGE teachers to have aided and encouraged their professional development more than the programs in Comparison schools (item 48). These items - and the entire subscales which are both statistically significant - indicate that the teachers in the IGE schools believe that not only do they work more closely together in solving problems and making decisions but that this also

gives them more professional fulfillment in their work. Indeed, the fact that IGE teachers respond in a significant manner on the question concerning the instructional program in their school clearly suggests that they like the IGE Program. Thus, in these two subscales, the IGE teachers have a significantly more favorable perception of the sharing of information and the amount of professional development which occurs as a by-product of their school's organizational and instructional program.

The final subscale concerns the teachers' desire for more training. This subscale is not intended to determine whether or not training has been properly provided. It is rather meant to serve as guide for possible future training. The two items which show a significant difference are not clear in which direction they are significant. The first concerns the expression of a greater desire for training in setting learning objectives (item 50) and the second concerns the expression of a greater desire for training in helping students with behavior problems (item 52). Overall, this subscale show a slight, or non-significant, difference toward the Comparison school teachers wanting more in-service training.

In conclusion, the subscale scores when measured by statistical tests (t-tests) reveal that there are significant differences in favor of the IGE schools for the five following subscales:

Variety of Grouping
Differentiated Tutoring
Balanced Teacher and Pupil Assignment to Units
Information Sharing
Professional Development

Overall, because more of the statistically significant items are in

favor of the IGE schools and because more of the subscales show a significant difference toward the IGE schools, it can be concluded that the IGE teachers tend to rate their instructional methods and procedures as attaining a greater degree of individualization than the Comparison school teachers do. The other major point evident in these responses is a strong feeling by the IGE teachers that they have had little support in implementing this program in the classroom.

FIGURE G-2
SUBSCALES WHICH SHOW STATISTICALLY SIGNIFICANT DIFFERENCES

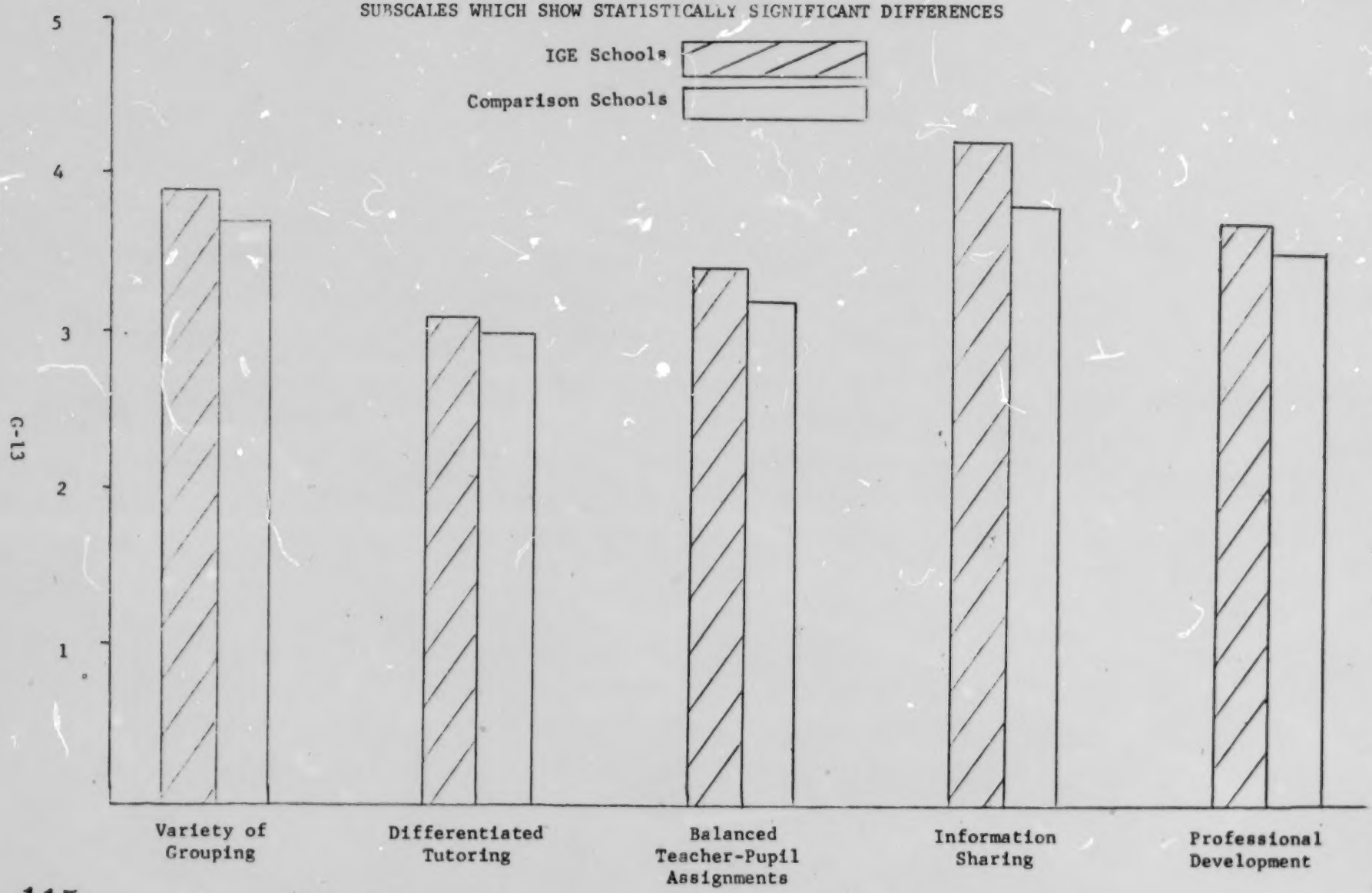


FIGURE G-3
SUBSCALES WHICH ARE NOT STATISTICALLY SIGNIFICANT

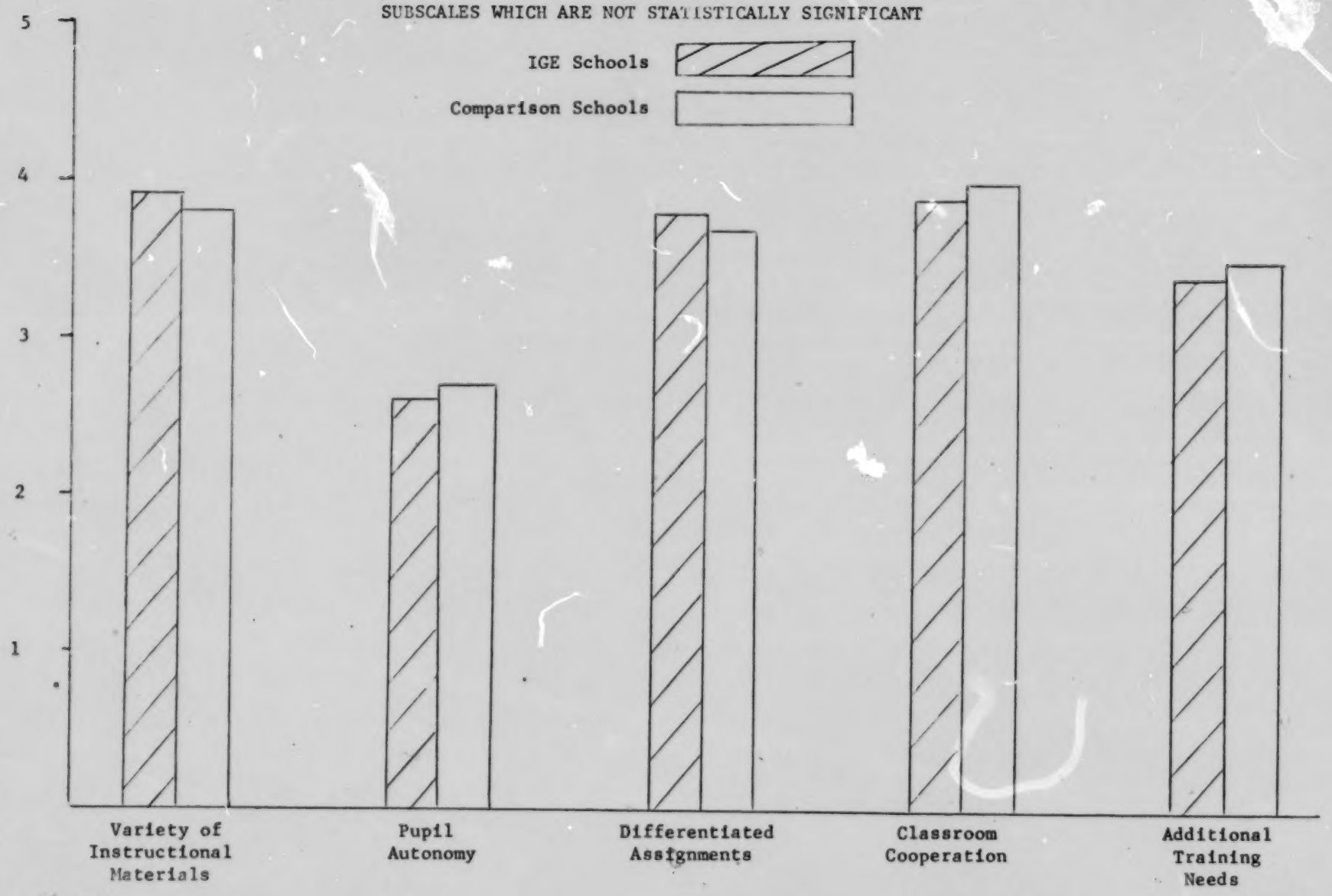
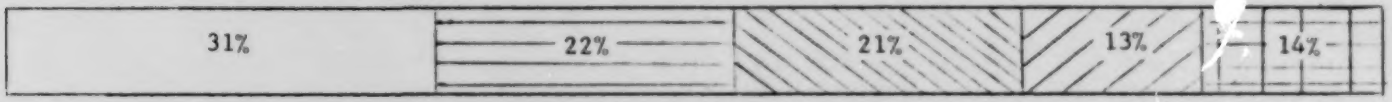
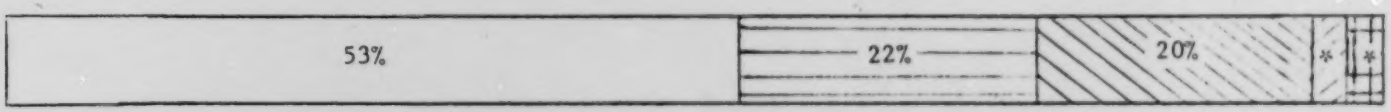


FIGURE C-4
GENERAL SUPPORT LEVELS

I understand what the IGE Program is all about (item 89).



The people in the IGE Program have been of assistance to me in implementing the program in my classroom (item 90).



* = 2%

The materials provided for the IGE Program have been adequate to meet the needs of implementing the program (item 91).

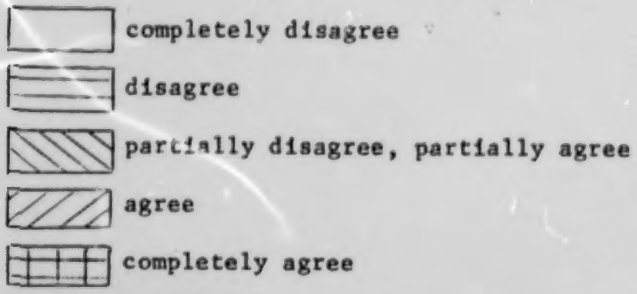
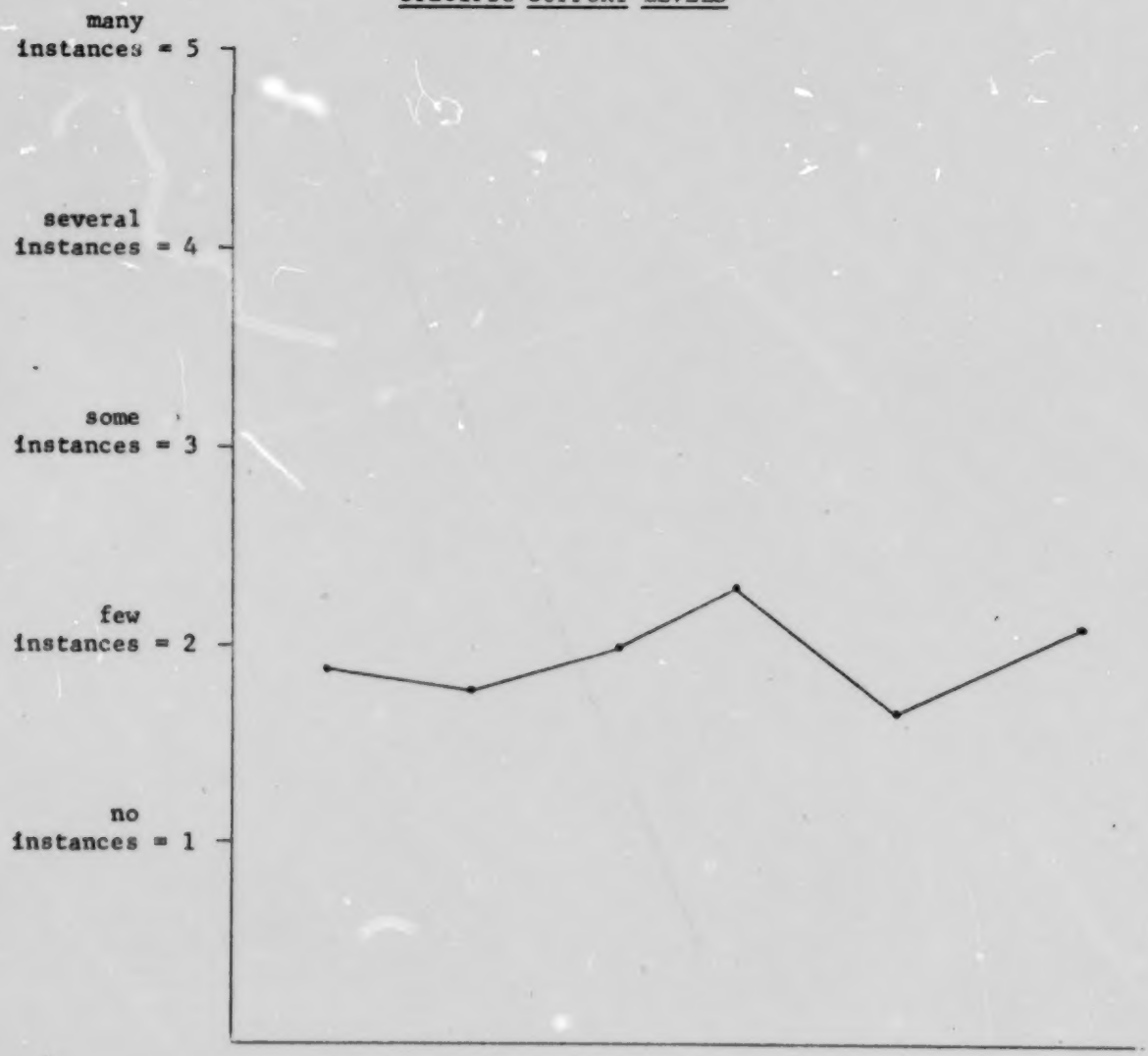


FIGURE G-5

SPECIFIC SUPPORT LEVELS


many instances = 5
several instances = 4
some instances = 3
few instances = 2
no instances = 1
Region XIII facilitators have helped you by:
their general contact with you (item 119)
building morale through observing, listening (item 120)
assisting you to locate or use resources (item 121)
providing useful in-service training (item 122)
planning and monitoring the effectiveness of your instructional program (item 123)
organizing league activities (item 124)

APPENDIX G-A

SUMMARY - SUBSCALE TOTALS

TEACHER QUESTIONNAIRE
Fall, 1973
Teachers' Responses Only

ITEMS	RESPONSES♦ Mean (Average) Scores		
	IGE Schools	Comparison Schools	
Each of the following subscales consists of several items, and each subscale score is the mean of the responses of the items in that subscale.			
I. Variety of Grouping (Items 1-7, excluding item 6)	3.9	3.7	*
II. Variety of Instructional Materials (Items 8-17)	3.9	3.8	
III. Pupil Autonomy (Items 18-23)	2.6	2.7	
IV. Differentiated Assignments (Items 24-27)	3.8	3.7	
V. Differentiated Tutoring (Items 28-33)	3.1	3.0	*
VI. Classroom Cooperation (Items 34-37)	3.9	4.0	
VII. Balanced Teacher-Pupil Assignments (Items 38-39)	3.4	3.2	*
VIII. Information Sharing (Items 40-43)	4.2	3.8	*
IX. Professional Development (Items 44-48)	3.7	3.5	*
X. Additional Training Needs (Items 49-55)	3.4	3.5	
XI. Support Levels (Items 90-91,119-124)			

♦ All items reflect a scale of 1 to 5 with 1 indicating a low rating and 5 indicating a high rating.

* Subscales which show statistically significant differences (based on t-tests).

APPENDIX G-B
ITEM RESPONSES

TEACHER QUESTIONNAIRE
Fall, 1973

ITEMS	RESPONSES # Mean (Average) Scores		
	IGE Schools	Comparison Schools	
I. Variety of Grouping			
1. Flexibility of changing group members (little - much)	4.1	3.8	
2. Frequency of changing group activities (no changes - frequent changes)	4.2	4.1	
3. Task-orientation of groups (little - much)	3.8	3.6	
4. Variations in group size (few - many)	4.0	3.6	*
5. Freedom of pupil movement (stationary - mobile)	4.2	4.0	
6. Organization of equipment and materials (dispersed - centralized)	3.1	3.2	
7. Coordination of grouping (not coordinated - very well coordinated)	3.8	3.8	
II. Variety of Instructional Materials			
8. Number of subjects for which several different textbooks are used (no subjects - all subjects)	3.6	3.2	*
9. Library books in the classroom (never used - always used)	4.4	4.5	
10. Reference books in the classroom (never used - always used)	3.6	3.6	
11. Teacher-made materials in the classroom (never used - always used)	4.6	4.4	
12. Periodicals and pamphlets in the classroom (never used - always used)	2.9	3.1	
13. Materials for different levels and interests in the classroom (never used - always used)	4.4	4.3	

* Items which show statistically significant differences (based on chi-square tests)

Responses were made on a scale of 1 to 5. The word or phrase in parentheses below each item indicates the rating: 1 on the left to 5 on the right.

ITEMS	RESPONSES		
	IGE Schools	Comparison Schools	
14. Audio-visual aids in the classroom (never used - always used)	4.1	4.1	
15. Self-scoring materials for students (never used - always used)	3.6	3.3	*
16. Learning centers defined in the classroom (never used - always used)	3.8	3.8	
17. Planned coordination of materials and equipment used (uncoordinated - very coordinated)	3.7	3.8	
III. Pupil Autonomy			
18. Long-range planning (teacher-directed - student-directed)	1.8	2.0	
19. Instructional objectives (teacher-directed - student-directed)	2.1	2.2	*
20. Short-range planning (teacher-directed - student-directed)	2.9	3.0	
21. Peer interaction (teacher-directed - student-directed)	3.5	3.7	
22. Evaluation of pupil achievement (teacher-directed - student-directed)	2.7	2.7	*
23. Effective use of time (teacher-directed - student-directed)	2.8	2.8	
IV. Differentiated Assignments			
24. Variations of assignments for your students (group assignments - individualized assignments)	3.6	3.3	*
25. Use of enriched or advanced assignments (never - always)	3.6	3.6	
26. Diagnosis of a student's learning needs (never - always)	4.3	4.1	
27. Diagnosis of a student's learning style (never - always)	3.8	3.8	

ITEMS	RESPONSES		
	IGE Schools	Comparison Schools	
V. Differentiated Tutoring			
28. Use of teacher tutoring a student (never - always)	3.7	3.5	
29. Use of resource persons tutoring a student (never -always)	3.3	2.9	*
30. Use of one student tutoring another (never - always)	3.5	3.3	
31. Use of an aide tutoring a student (never - always)	2.4	2.4	
32. Use of a volunteer tutoring a student (never - always)	2.5	2.5	
33. Coordination of tutoring (little - much)	3.3	3.1	*
VI. Classroom Cooperation			
34. Feeling of mutual respect between teacher and student (never - always)	4.4	4.4	
35. Feeling of mutual respect between students (never - always)	3.7	3.8	
36. Cooperative use of materials by students (never - always)	3.9	4.0	
37. Decision-making to iron out problems shared by teachers and students (never - always)	3.8	3.8	
VII. Balanced Teacher-Pupil Assignments			
38. Characteristics of students you work with such as age, maturity, social behavior, achievement, etc. (unsatisfactory balance - perfect balance)	3.1	3.0	
39. (For team teachers) Teacher characteristics in the team such as complementary teaching skills, complementary personalities, etc. (unsatisfactory balance - perfect balance)	3.8	3.7	

ITEMS	RESPONSES		
	IGE Schools	Comparison Schools	
50. I would like further training in setting learning objectives. (not at all - very much)	3.2	3.2	*
51. I would like further training in making materials for use with my group. (not at all - very much)	3.8	3.8	
52. I would like further training in helping children with behavior problems. (not at all - very much)	4.1	3.9	*
53. I would like further training in diagnosing learning levels. (not at all - very much)	3.5	3.6	
54. I would like further training in working as a team leader. (not at all - very much)	2.9	2.9	
55. I would like further training in communicating with parents. (not at all - very much)	2.8	3.0	

Note: Items 56 - 88 and items 92 - 118 relate to programs other than IGE and are therefore not reported here.

ITEMS	RESPONSES		
	IGE Schools	Comparison Schools	
VIII. Information Sharing			
40. Teachers make their own instructional decisions (never - always)	4.0	3.8	
41. Teachers share information about individual pupils (never - always)	4.5	4.2	*
42. Teachers are aware of one another's classroom activities (never - always)	4.0	3.8	*
43. Multi-classroom problems are resolved by the school staff through a cooperative decision-making process (never - always)	3.9	3.4	*
IX. Professional Development			
44. Fellow teachers aid and encourage my professional development (never - always)	4.0	3.7	*
45. Support staff (teachers of special subjects, aides, counselors, etc.) aid and encourage my professional development (never - always)	3.7	3.5	*
46. Supervisors aide and encourage my professional development (never - always)	3.3	3.3	
47. The principal aids and encourages my professional development (never - always)	3.9	3.7	
48. The instructional programs in my school aid and encourage my professional development (never - always)	3.7	3.4	*
X. Additional Training			
49. I would like further training in designing activities to meet the learning needs of students (not at all - very much)	3.9	3.9	

ITEMS	RESPONSES Mean (Average) Scores
	IGE Schools
89. I understand what the IGE Program is all about. (completely disagree - completely agree)	4.0
90. The people in the IGE Program have been of assistance to me in implementing the program in my classroom. (completely disagree - completely agree)	2.6
91. The materials provided for the IGE Program have been adequate to meet the needs of implementing the program. (completely disagree - completely agree)	1.8
The following items (119-124) are concerning the following statement:	
To what extent have Region XIII elementary facilitators helped you individualize instruction this year by:	
119. their general contact with you. (no instances - many instances)	1.9
120. building morale through observing, listening, counseling problem-solving, etc. (no instances - many instances)	1.8
121. assisting you to locate, obtain, or use personnel or material resources. (no instances - many instances)	2.0
122. providing useful in-service training. (no instances - many instances)	2.3
123. planning and monitoring the effectiveness of your instructional program. (no instances - many instances)	1.7
124. organizing league activities. (no instances - many instances)	2.1

APPENDIX II

INSTRUMENT REPORT

TEACHER QUESTIONNAIRE REACTION SHEET REPORT

Date/Period of Administration: October - November, 1973
Population: Teachers in the eleven IGE schools and the eleven Comparison schools. 93% of the IGE teachers returned the questionnaire and 88% of the Comparison teachers returned the questionnaire. Of the 194 IGE teachers who completed the questionnaire, 120 made some comment on the reaction sheet. Of the 212 teachers in Comparison schools who returned the questionnaire, 102 made some comment on the reaction sheet.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

TEACHER QUESTIONNAIRE REACTION SHEET REPORT

In the fall of 1973, a questionnaire was sent to all teachers in the eleven IGE schools and the eleven Comparison schools in order to obtain their views concerning certain IGE Program objectives. Attached to this questionnaire was a reaction sheet on which the teachers could freely express their feelings concerning the various school programs. This report is concerned only with the responses made on the reaction sheet and not with the questionnaire itself.

Of the 194 teachers in the IGE schools who completed the questionnaire, 62% made some comment on the reaction sheet. Of the 212 teachers in the Comparison schools who completed the Questionnaire, 48% made some comment on the reaction sheet. See Figure H-1.

The teachers were first asked about the school programs with which they are pleased. The two most favorable comments are mentioned more frequently than the others by both IGE and Comparison school teachers. They are pleased first with their fellow teachers and second with their principal. Many other favorable comments are made, but a few are made more frequently than others. The IGE teachers express their pleasure both with IGE explicitly and with characteristics of the IGE concept such as individualization, team teaching, their team members, and the open classroom. Comparison school teachers are pleased with their freedom to innovate and make decisions. Teachers from both types of school comment favorably on the parents of their students. See Figures H-2 and H-3.

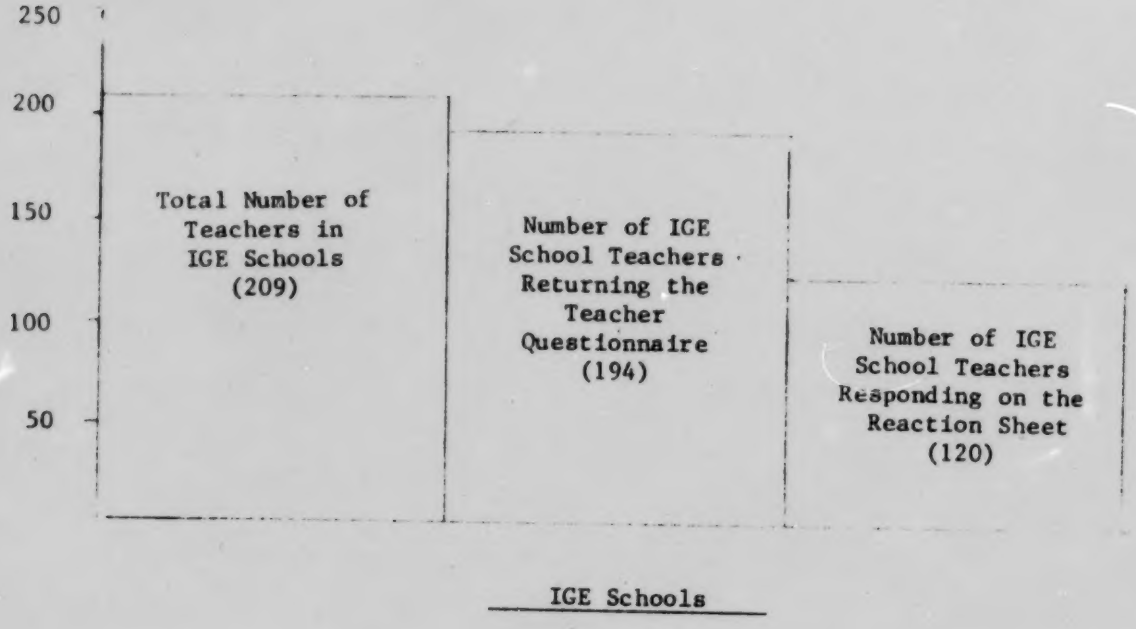
IGE and Comparison school teachers express their displeasure most frequently about the following two items: their lack of materials and their lack of aides. IGE teachers also believe that the Administration

is not supporting the IGE schools with the money, materials and support help which they felt had been promised. Other comments made concerning school programs with which the teachers are displeased are the high pupil-teacher ratio and the lack of time to accomplish the planning and tasks that are required of them. However, a number of teachers in both types of school report that they have no complaints. See Figures H-4 and H-5.

Every comment that was made by a teacher has been tallied and has been listed by their respective school. In making the compilation for this report though any comment that was made less than eight times was excluded from analysis.

Figure H-1

RESPONSE LEVELS FOR THE TEACHER QUESTIONNAIRE


250
200
150
100
50
Total Number of Teachers in IGE Schools (209)
Number of IGE School Teachers Returning the Teacher Questionnaire (194)
Number of IGE School Teachers Responding on the Reaction Sheet (120)
IGE Schools

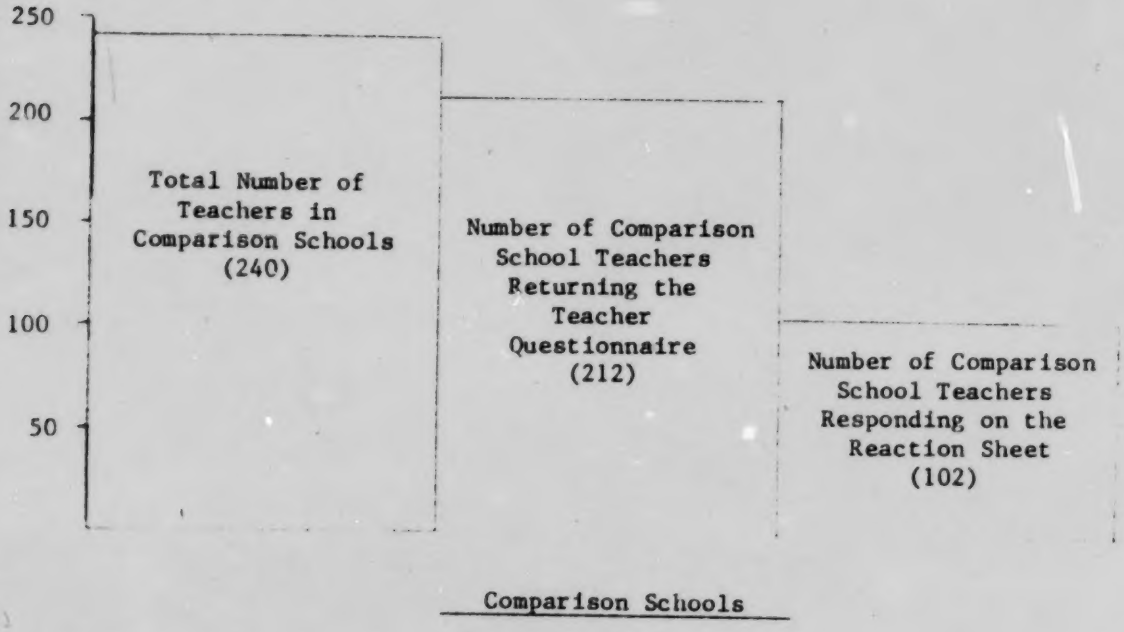
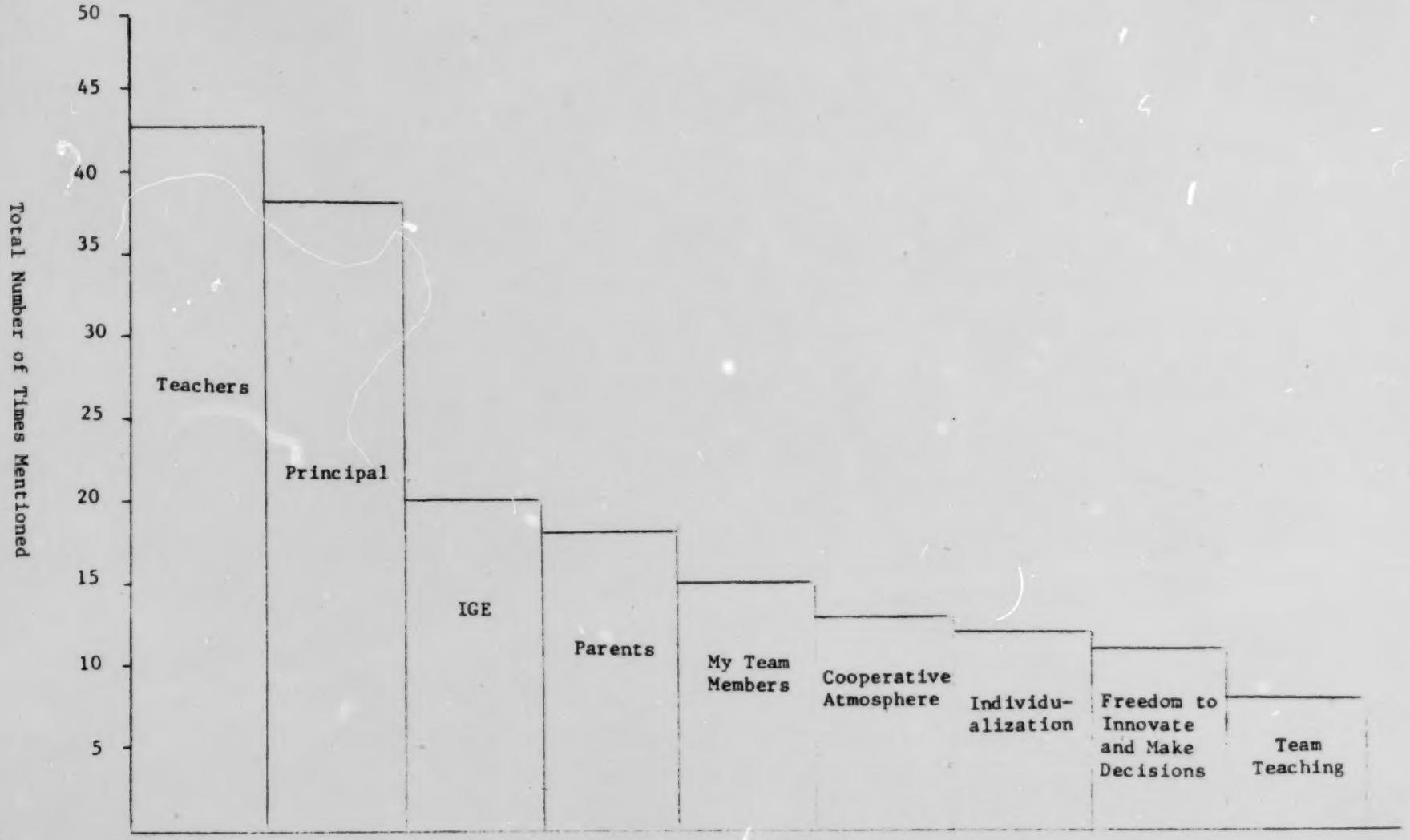
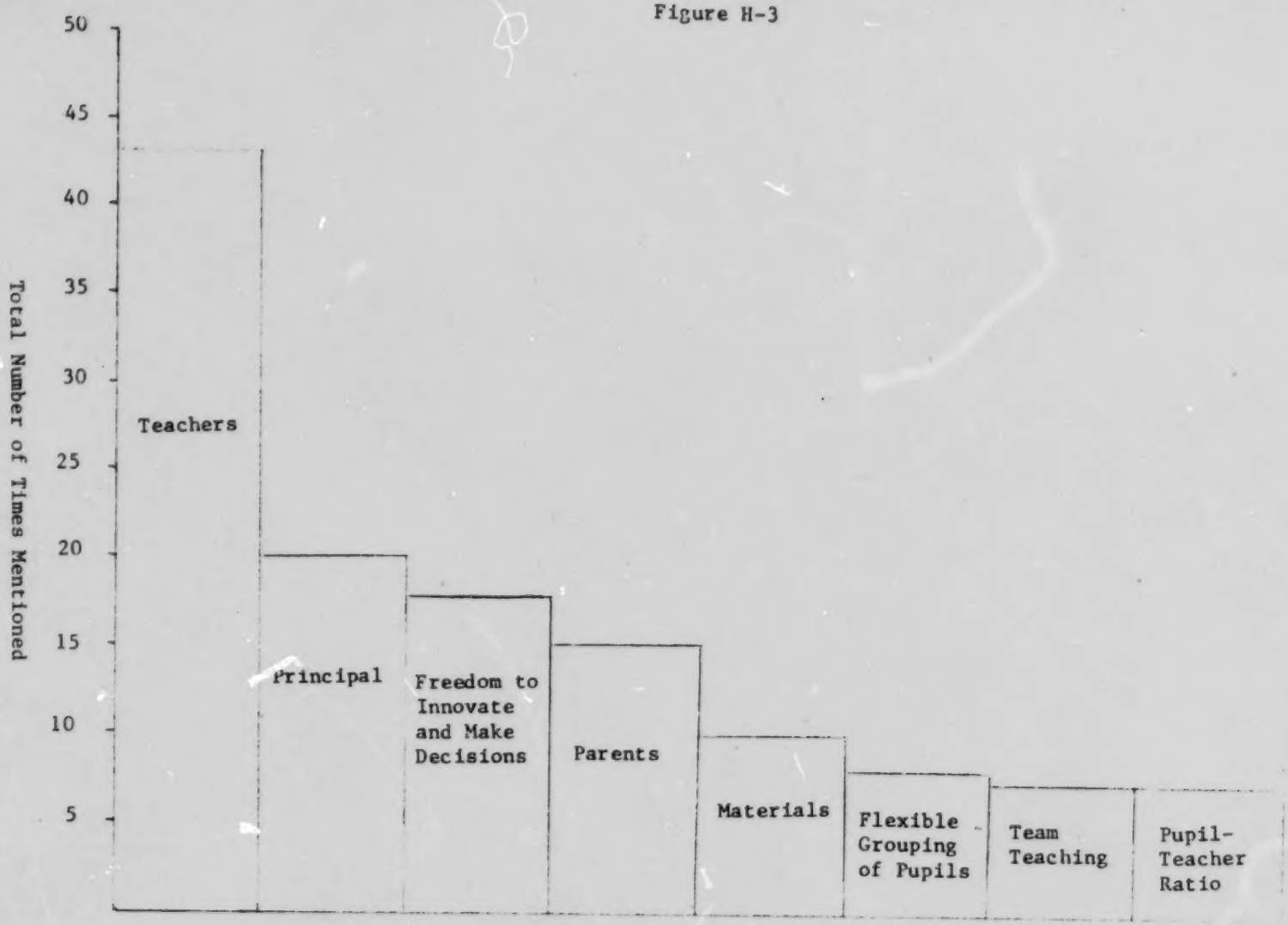

250
200
150
100
50
Total Number of Teachers in Comparison Schools (240)
Number of Comparison School Teachers Returning the Teacher Questionnaire (212)
Number of Comparison School Teachers Responding on the Reaction Sheet (102)
Comparison Schools

Figure H-2



WHAT IGE TEACHERS LIKE BEST

Figure H-3



WHAT COMPARISON SCHOOL TEACHERS LIKE BEST

Figure H-4

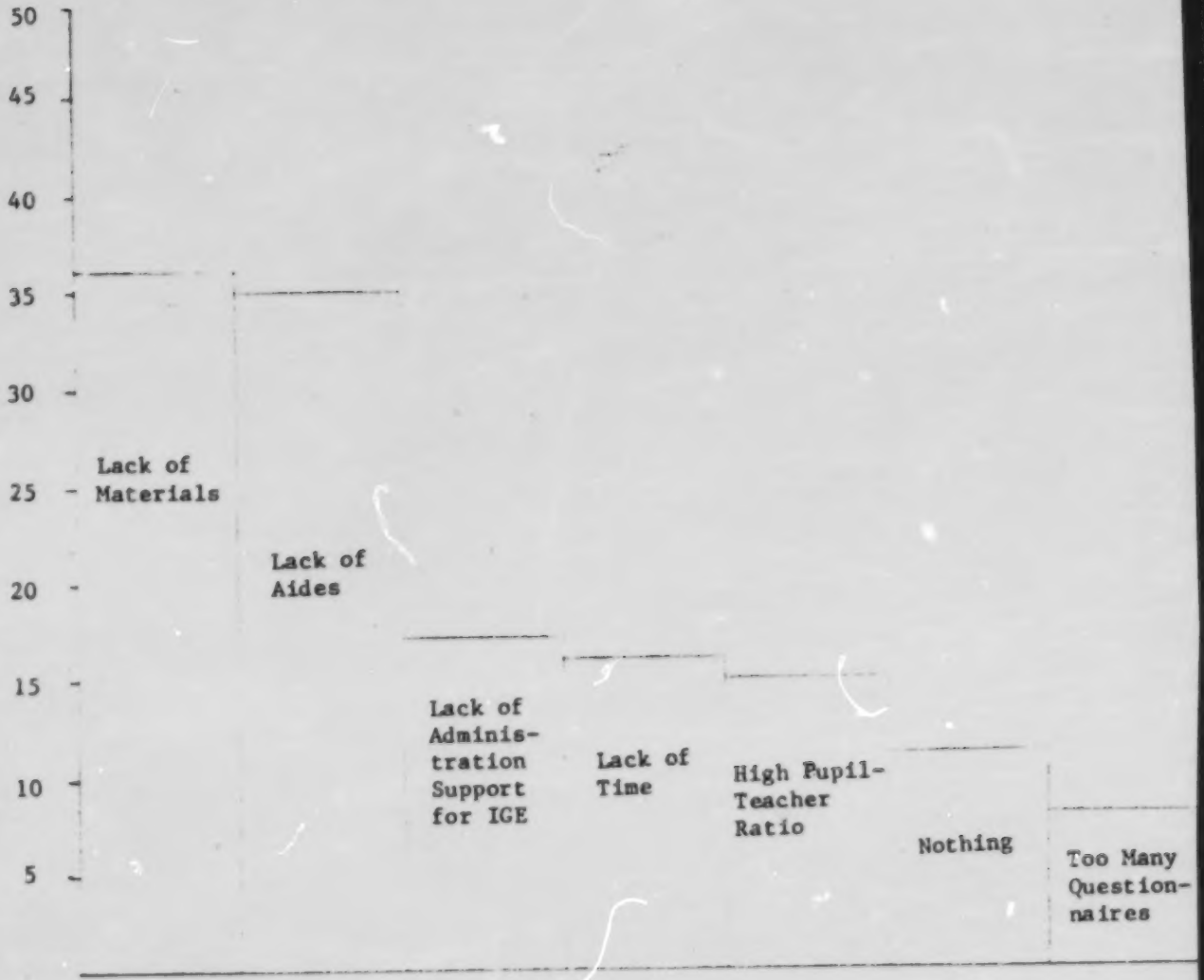
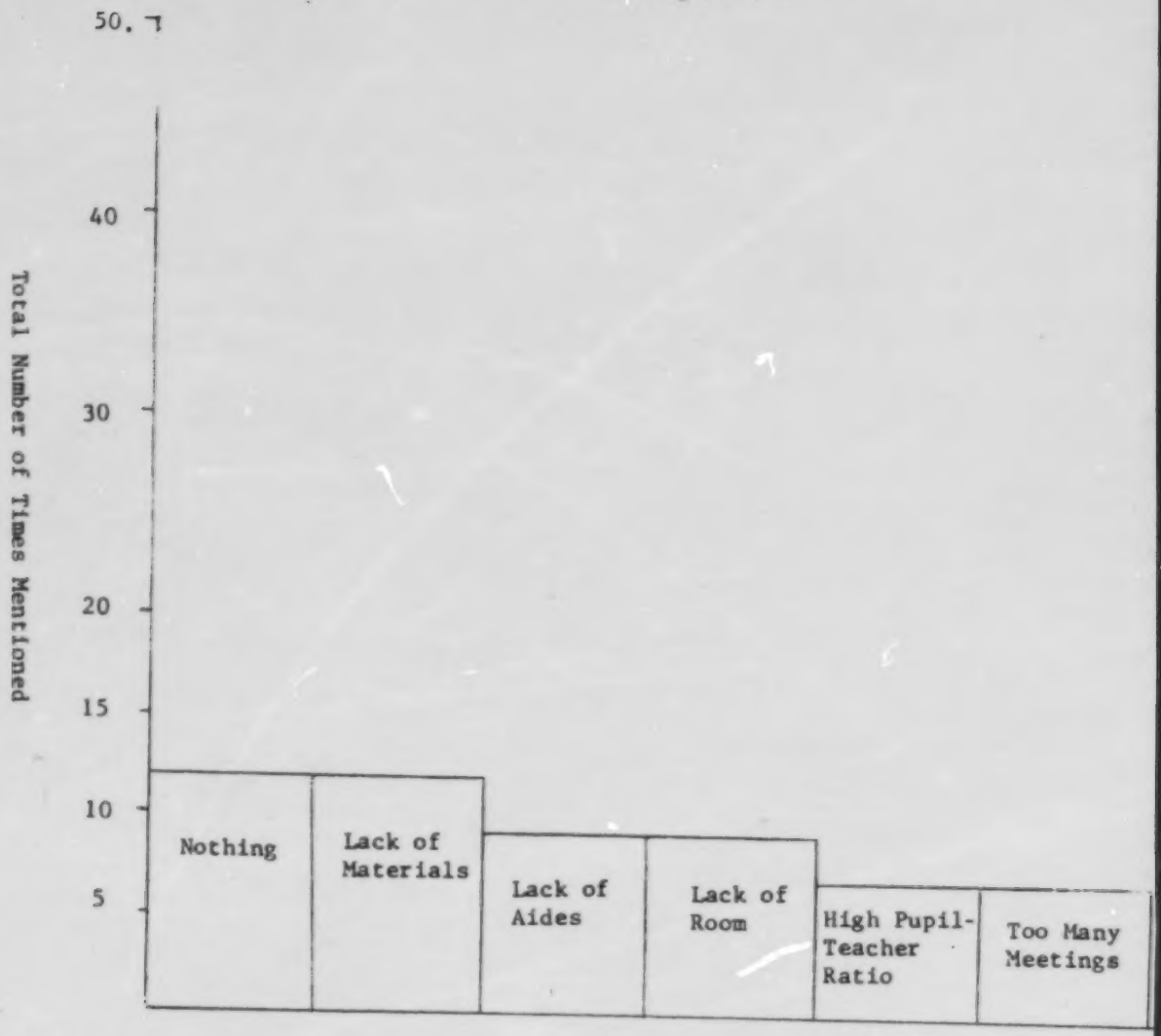

50
45
40
35
30
25
20
15
10
5
Total Number of Times Mentioned
Lack of Materials
Lack of Aides
Lack of Administration Support for IGE
Lack of Time
High Pupil-Teacher Ratio
Nothing
Too Many Questionnaires
WHAT IGE TEACHERS DISLIKE

Figure II-5


50. 7
40
30
20
15
10
5
Total Number of Times Mentioned
Nothing
Lack of Materials
Lack of Aides
Lack of Room
High Pupil-Teacher Ratio
Too Many Meetings
WHAT COMPARISON SCHOOL TEACHERS DISLIKE

Appendix I

CLASSROOM OBSERVATION CHECKLIST

Date/Period of Administration:	Throughout Fall and Spring Semesters
Population:	All units of IGE Schools and randomly selected classes from each Comparison School
Administered by:	Office of Evaluation Staff
Data Collected by:	Office of Evaluation Staff

Description of
Classroom Observation Checklist

Who was the instrument given to?

All IGE school units and a Randomly-Selected sample of Comparison school classes

When was the instrument administered?

Throughout Fall and Spring semesters

How many administrations?

One for each unit or class

Where was the administration?

In the unit or class during instructional periods

Who administered the instrument?

Classroom Observers in the Office of Evaluation

What training did the administrators have?

Previous classroom teaching experience, and pilot usage of the instrument in classes not involved in the IGE evaluation.

What problems exist that might affect the validity of the data?

(1) Short observation periods (approximately 30 minutes) might result in observing non-typical activities.

(2) Some of the items relate to conditions that are not directly observable but must be inferred by observers.

Brief Description of Instrument.

Consists of 50 items (for the form used during the Spring semester; during the Fall semester, an earlier version, consisting of 38 items was utilized). Each item relates to a specific type of classroom activity or condition and a rating is assigned by the observer for each item, indicating the degree to which that activity is implemented or that condition exists. The items are grouped into groups of items all relating to similar activities or conditions each grouping being a subscale with a score equal to the mean of the ratings of the items of that subscale.

Description of
Classroom Observation Checklist
(Continued)

How was the Instrument Developed?

The original instrument was synthesis of other observation instruments previously developed by ESC XIII, the /I/D/E/A/ Corporation, and other agencies. This instrument was pilot-tested in two schools and generally difficult items were revised. The resulting instrument was utilized during the Fall semester. The instrument was expanding in the Spring semester; several additional items were added to obtain data that was not collected during the Fall semester.

Is the Instrument Standardized?

No

What are the Reliability and Validity Characteristics of the Instrument.

The only study completed to date examined the consistency of ratings between the two classroom observers, for each of the subscales, ranged from 0.92 to 0.96

Appendix I
The Classroom Observation Checklist

The Classroom Observation Checklist (COC) was devised as a form to be used by classroom observers in reporting their observations, in a class or unit, of certain instructional activities that are associated with the IGE concept. The primary purpose of these observations, using the Classroom Observation Checklist, is to document the degree to which IGE schools are implementing the IGE procedures. In this appendix, a summary of this documentation is presented.

The COC consists of several items pertaining to each of six distinct components of individualized education. During the second semester, two of these components of individualized education were divided into two sub-components. The components are:

1. Intra-class Grouping

This component describes the extent and the appropriateness of the use of grouping pupils within a unit or class to facilitate individualized instruction.

2. Variety of Instructional Materials

During the fall semester, this component described the extent to which a wide variety of instructional materials (such as texts, teacher-made materials, audio-visual aids, etc.) was used in the unit or class. During the Spring semester, the component was divided into two sub-components, one describing the availability of materials and the other describing the usage of these materials.

3. Pupil Autonomy

This component describes the extent to which pupils exercise independence in the planning and execution of their own instruction.

4. Differentiated Assignments

This component describes the extent to which each pupil is provided with assignments appropriate his/her needs and skills.

5. Variety of Tutoring

During the fall semester, this component describes the extent to which different tutoring sources (teachers, aides, peers, etc.) are utilized in instruction. During the Spring semester, the component was subdivided into two subcomponents, one describing the availability of such tutoring sources and the other describing the extent to which such sources were actually utilized.

6. Classroom Harmony

This component describes the extent to which a unit or class is well disciplined with mutual respect between teachers and pupils and mutual respect among pupils.

A detailed discussion of other aspects of instrument is provided in Table I-3.

Although all of the components describe class activities that have become associated with the IGE concept, they are all activities which could be engaged in any classroom. It is thus reasonable to compare the degree of IGE school implementation of any of the components to Comparison school implementation of that component.

Such a comparison is one method of determining whether IGE schools are implementing the IGE processes. This form of comparison does not provide any insight as to whether IGE schools have implemented the IGE processes to a sufficient degree. However, IGE literature does not provide any absolute criteria for determining what degree of implementation is sufficient.

Subscale Analyses

The difference between the mean score of the IGE schools and the mean score of the Comparison schools, for each subscale of the Observation Checklist was examined by means of a t-test. The summary data relevant to these analyses is displayed in Tables 1. With two exceptions, the IGE mean subscale, for all subscales and for both Fall and Spring semesters, was significantly higher than the comparable subscale mean for Comparison schools. The two subscales excepted are the Intraclass Grouping and the Classroom Harmony subscales. For each of these subscales, there was no significant difference during the Spring semester only between IGE schools and Comparison schools.

A related analysis, to rank the subscales according to the degree to which they reflected differences between IGE and Comparison schools, was also performed. A Discriminant Analysis, was performed on two groups (IGE schools and Comparison schools) and the correlation between the obtained discriminant function and each subscale was determined. The rank ordering of these correlations may be considered as a ranking of the subscales in accordance with the degree to which they differentiate the IGE and Comparison schools. The results of the discriminant analyses are displayed in Table 2. During both semesters, the Variety of Tutoring subscale consistently ranked number 1 in differentiating IGE and Comparison schools.

Additional Analyses for the Pupil Autonomy Subscale

The Pupil Autonomy subscale, unlike the other subscales, may be considered to be a measure of pupil performance as well as a measure of degree of implementation of a process by teachers. For this reason an additional analysis was performed on this subscale to determine if the IGE program had a detrimental impact on the pupil autonomy if a given subpopulation of students. The two subpopulations of students that could be identified for this analysis were students attending Title I schools and students attending non-Title I schools.

The following linear model was utilized in this analysis:

$$(Y) = a_0U + a_1X^{(1)} + a_2X^{(2)} + a_3X^{(3)} + a_4X^{(4)}$$

Where: Y is a vector of pupil autonomy subscale scores, one score for each class or unit observed

U is a unit vector

$X^{(1)}$ is a group membership vector for units in Title I IGE schools

$X^{(2)}$ is a group membership vector for classes in Title I Comparison schools

$X^{(3)}$ is a group membership vector for units in non-Title I IGE schools

$X^{(4)}$ is a group membership vector by classes in non-Title I Comparison schools

The following two hyptheses were tested simultaneously:

$\mathcal{E}$(Title I IGE School Unit) = $\mathcal{E}$(The I Comparison school Class)

$\mathcal{E}$(Non-Title I IGE School Unit) = $\mathcal{E}$(Non-Title I Comparison School Class)

The above pair of hypotheses was not rejected for mean subscale scores obtained during the Fall Semester. However, for the mean subscales scores obtained during the Spring Semester, the pair of hypotheses was rejected. For the Spring data, the IGE School of either type (Title I, or Non-Title I) have higher subscale means than do the Comparison schools of the same type. Table I-3 displays the summary data for this analyses.

Observation Checklist Subscales
Differences Between IGE And Comparison Schools

Subscale	Fall Observations			Spring Observations		
	Subscale Mean		Results of Analysis	Subscale Mean		Results of Analysis
	IGE	Comparison		IGE	Comparison	
Intraclass Grouping	4.29	3.94	*	4.04	3.88	NS
Variety of Materials	3.79	3.39	*	3.77	3.30	*
-Availability of materials [2]				4.25	3.70	*
- Usage of Materials [2]				3.77	3.32	*
Pupil Autonomy	3.05	2.80	*	2.87	2.61	*
Differentiated Assignments	4.02	3.46	*	3.80	3.37	*
Variety of Tutoring	3.73	2.84	*	3.28	2.63	*
- Availability of Tutoring [2]				2.31	1.50	*
- Usage of Tutoring [2]				3.44	2 76	*
Classroom Harmony	4.46	4.21	*	4.25	4.09	NS

Note 1. NS - No significant difference between IGE and Comparison School subscale means at α = .05 level

* - Significant difference between IGE and Comparison School subscale means at α = .05 level

Note 2. This subscale not used during the Fall Semester

Table I-1

Observation Checklist Subscales
Ranking of Subscales In Accordance With
IGE And Comparison Schools

Subscale	Fall Semester		Using Same Subscales as in Fall Term		Spring Semester Using Spring Subscales	
	Correlation	Rank	Correlation	Rank	Correlation	Rank
Intraclass Grouping	.54	3	.27	5	.25	7
Variety of Materials	.52	4	.61	2		
Availability of Materials[2]					.63	3
Usage of Materials[2]					.54	4
Pupil Autonomy	.35	6	.44	4	.41	6
Differentiated Assignments	.65	2	.54	3	.50	5
Variety of Tutoring	.94	1	.89	1		
Availability of Tutoring[2]					.88	1
Usage of Tutoring[2]					.78	2
Classroom Harmony	.39	5	.27	6	.25	8

Note 1. All correlations are between subscale scores and discriminant function.

Note 2. This subscale was not used during the fall semester.

Table I-2

Pupil Autonomy
Classroom Observation Checklist
Title I/Non- Title I Analyses

Semester	Title I Non-Title I Status	Mean Subscale Score IGE	Comparison	Results of Analysis[1]
Fall	Title I	3.00	2.96	NS
	Non-Title I	2.96	2.67	
Spring	Title I	2.93	2.79	*
	Non-Title I	2.88	2.57	

Note 1. NS - The hypothesis $\psi_I = \psi_N = 0$ is not rejected at the $\alpha = .05$ level

Where: ψ_I = $\mathcal{E}$(Title I IGE Mean) - $\mathcal{E}$(Title I Comparison Mean)

ψ_N = $\mathcal{E}$(Non-Title I IGE Mean) - $\mathcal{E}$(Non-Title I Comparison Mean)

* - The hypothesis $\psi_I = \psi_N = 0$ is rejected at the $\alpha = .05$ level

Table I-3

APPENDIX J

INSTRUMENT REPORT

COMMENTS SHEET OF OBSERVATION
CHECKLIST REPORT

Date/Period of Adminsistration: Both semesters, 1973-1974.
Population: Principal or teacher(s) observed in either the IGE schools or the Comparison schools.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

CLASSROOM OBSERVATION COMMENT SHEET REPORT

A copy of the comment sheet, along with the completed observation checklist, was left after the observation either with the principal or with the teacher(s) who had been observed. The comment sheet was provided to them so that they could freely react to a few possible problems that the observation may have created.

In the fall semester, there were 104 observations (104 comment sheets). 52 comment sheets, or 50%, were returned. In the spring semester, there were 104 observations (104 comment sheets). 37 comment sheets, or 36%, were returned.

The overwhelming consensus from the responses made by both the IGE school teachers and the Comparison school teachers indicates that the following three statements can be made.

1. The observers did not interfere with normal classroom activites.
2. The time period that was observed was typical of regular school activites.
3. The observers observed and rated the items on the checklist correctly.

These three things can be concluded from the teachers' responses both in the fall semester and in the spring semester. Please see the tables (J-1 through J-4) which summarize the responses that were made.

If the teacher thought that an item was rated incorrectly, when the comment sheet was returned to our office, the item was corrected.

Table J-1

COMMENTS ON OBSERVATION CHECKLIST

IGE Teachers' Responses
Fall, 1973

1. Do you agree with the information recorded on the first page of the observation checklist?

   Yes = 33
   No = 0

2. Did the observers interfere with normal classroom activities?

   Yes = 0
   No = 33

3. Do you agree with the account of the time observed?

   Yes = 33
   No = 0

4. Was the time observed typical of the hour's activities?

   Yes = 31
   No = 2

5. Additional comments:

   Observer sensitive, perceptive, pleasant = 3
   Time spent reviewing the observation checklist was worthwhile = 2
   Observers should stay longer = 2
   Observers should observe more than one time = 2
   There are different activites at different times = 2
   Checklist should have a "Not Applicable" marking = 2
   Explanation of marking system should be included with the observation = 1
   IGE subjects weren't observed = 1
   Observers did not ask to see the pupil's records = 1
   Did not fully understand certain of the items = 1
   Pleased = 1
   It was not a threatening type of evaluation = 1

Table J-2

COMMENTS ON OBSERVATION CHECKLIST

Comparison School Teachers' Responses
Fall, 1973

1. Do you agree with the information recorded on the first page of the Observation Checklist?

   Yes = 19
   No = 0

2. Did the observers interfere with normal classroom activities?

   Yes = 1
   No = 18

3. Do you agree with the account of the time observed?

   Yes = 19
   No = 0

4. Was the time observed typical of the hour's activities?

   Yes = 15
   No = 4

5. Additional comments:

   None

   Appreciate having a chance for feedback

   Glad that repeat observations are scheduled

   Questions highly subjective, vague

   Observation time not long enough

   Observers do not know students' levels of achievement and can not see all of the planning, grouping, etc.

Table J-3

COMMENTS ON OBSERVATION CHECKLIST

ISE Teachers' Responses

Spring Semester

1. Do you agree with the information recorded on the first page of the Observation Checklist?

Yes -- 25 No -- 1

2. Did the observers interfer with normal classroom activities?

Yes -- 0 No -- 26

3. Do you agree with the account of the time observed?

Yes -- 26 No -- 0

4. Was the time observed typical of the hour's activities?

Yes -- 26 No -- 0

5. Additional comments:

(a) We appreciated the pleasant cooperation of observers. They were perceptive and efficient.

(b) Very fair

(c) 10-15 min. is not an adequate amount of time to observe the functioning of the classroom.

(d) ...(had the observers asked) we could have explained program procedure and pupil evaluation.

(e) We were very pleased with the evaluation. We feel a lot was missed because of the short time spent in each room.

(f) Observers were pleasant, did not make children or teachers nervous.

(g) We appreciate seeing the evaluation.

Table J-4

COMMENTS ON OBSERVATION CHECKLIST

Comparison Teachers' Responses
Spring Semester

1. Do you agree with the information recorded on the first page of the Observation Checklist?

Yes -- 11 No -- 0

2. Did the observers interfer with normal classroom activities?

Yes -- 0 No -- 11

3. Do you agree with the account of the time observed?

Yes -- 11 No -- 0

4. Was the time observed typical of the hour's activities?

Yes -- 11 No -- 0

5. Additional comments:

(a) The observers were pleasant to have in my classroom. Their facial expressions and understanding of the activities and goals added to my enjoyment in having them in the room.

(b) We feel "good" about our program and glad that the evaluators seemed to like it.

(c) If the observer had been here longer she would have gotten to see our reading activities time.

APPENDIX K

INSTRUMENT REPORT

PRINCIPAL QUESTIONNAIRE REPORT

Date/Period of Administration: October - November, 1973
Population: The eleven IGE school principals and the eleven Comparison school principals.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

PRINCIPAL QUESTIONNAIRE REPORT

One of the questions that is being considered for the evaluation of the Individual Guided Education (IGE) Program is: "Are the IGE schools conducting a program for keeping parents informed and encouraging their participation in the schools' instructional activities?" Preliminary results obtained so far, based on information obtained from school principals, indicates that the IGE schools may not exhibit as extensive a program for keeping parents informed and encouraging their participation as do the comparison schools. An alternative explanation here, however, and throughout the report is that IGE principals are more perceptive about factors questioned because of their training and hence rate the items lower.

This and other results were obtained from data collected by a Principal Questionnaire which was completed by principals in late October of this school year. Appendix A of this report contains a description of questionnaire items that are relevant to the IGE evaluation, the average response by IGE school principals, and the average response by comparison school principals.

An inspection of the average responses to each of items 1-10 in Appendix A indicates the degree to which IGE schools and comparison schools utilize different methods of communicating with parents. The responses for items 11-13 in Appendix A indicate the degree to which parents participate in the school instructional activities in IGE schools and comparison schools.

Several additional questions relevant to the IGE evaluation can be partially answered by examination of data obtained from the Principal Questionnaire. These additional questions, and the results of the analyses, are considered in the next four paragraphs.

In addition to the question considered in the first paragraph of this report, a second question is: "Is there two-way communication between principal and teachers?" Items 14 and 16 of the questionnaire provide data which suggests answers to this question. The percentage of IGE schools which have an organized program to collect ideas and reactions from the teachers is slightly larger than the percentage of comparison schools which have such a program (See item 14). However, the principals of the comparison schools appear to attend more teacher meetings than do the principals of the IGE schools (See item 16).

A third question is: "Is the organizational structure of the school effective?" Items 17, 18, and 19 of the questionnaire are

directed toward this question. In the opinion of principals the effectiveness of the organizational structure of IGE schools for satisfying the needs of students and teachers is greater than the effectiveness of the organizational structure for comparison schools. (See items 18 and 19). However, IGE school principals did not consider grade-level or unit teacher meetings to be as much an integral part of the organizational structure as did comparison school principals. (See item 17).

The fourth question is: "Does the principal act as an instructional leader?" Item 15 of the questionnaire provides data concerning the percentage of time utilized by principals as instructional leaders. The questionnaire results indicate that IGE school principals spend somewhat less time in their capacity as an instructional leader than do the principals of the comparison schools.

The final question that was considered is: "What is the quality of the supporting services provided to IGE schools?" The responses by IGE school principals to items 34-35 of the questionnaire indicate that the technical assistance personnel and materials were regarded as helpful support for the IGE schools.

Two points should be considered prior to making any interpretation of the results of these analyses:

a. The data in which the analyses were performed is self-report data. The results of the analyses thus can describe the true state of affairs only if these self-reports are accurate.

b. No statistical tests for significant differences between means were performed.

DESCRIPTION OF THE PRINCIPAL QUESTIONNAIRE

How many administrations of the instrument were there?

One

Where was it administered?

In the schools

Were there any problems with the measure or with the administration which might affect the validity of the data?

The instrument is a self-report inventory so the validity of the instrument is limited to the extent to which the respondents' perceptions were correct.

Brief description of the instrument

There are 45 questions of which questions 1-19 and 34-35 pertain to the IGE Program.

What was the rationale for the instrument?

To obtain the views of the principals of the IGE and Comparison schools on various aspects of the IGE Program.

Who developed the instrument?

Staff of the Office of Evaluation

How was the instrument developed?

Questions were derived from the objectives of the IGE Program with which the principals should have been familiar.

Is the instrument standardized?

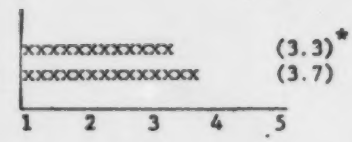
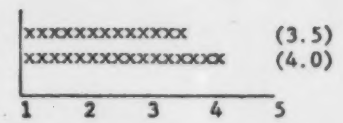
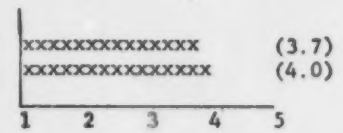
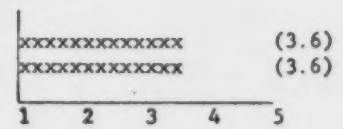
No

Is there any information regarding the reliability and validity of the instrument?

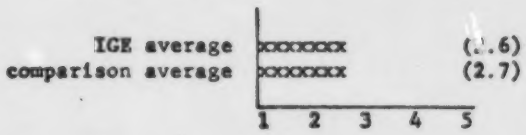
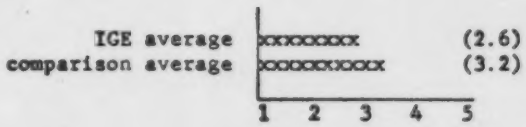
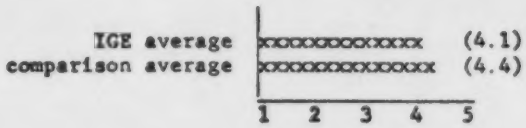
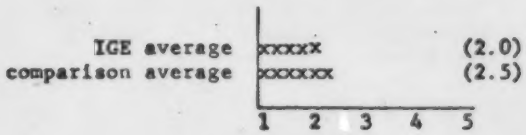
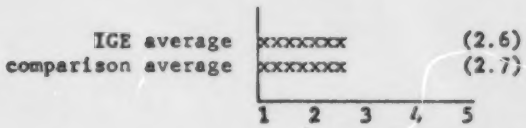
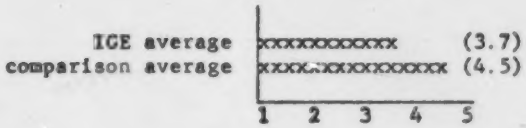
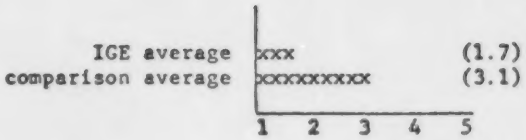
No

APPENDIX K-A

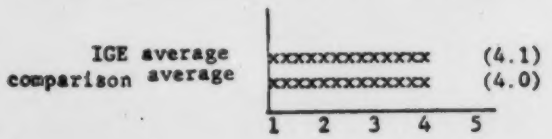
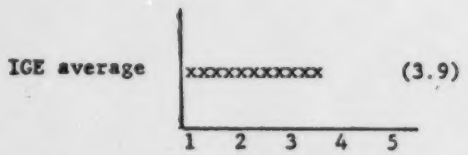
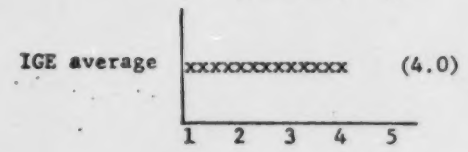
Principal Questionnaire
Results

ITEMS	RESPONSES*
The following scale was used to rate items 1-10. 1. never 2. almost never 3. sometimes 4. almost always 5. always	
In order to inform parents of the objectives and rationale of the school's educational program, how often are the following methods used?	
1. Newsletters	
2. PTA	
3. Open House	
4. Memos Sent Home	

* - Numbers in parentheses are averages.

ITEMS	RESPONSES
5. Parent Study Groups	
6. Telephone Calls	
7. Teacher-parent Conferences	
8. Workshops	
9. Visits to the Home	
10 Other (Note: The three other methods specified by IGE schools were Koffee Klotches; Orientation for New Student's Parents; and Counselor/Community Representatives. The two other methods specified by the comparison schools were Back-to-School Night and Parent Volunteer Program.)	
11. How many parents would you estimate serve as resource people in your school sharing the information and talents they possess? 1. 0-25 2. 26-50 2. 51-75 4. 76-100 5. over 100	

ITEMS	RESPONSES	
12. How many parents would you estimate serve as volunteers or aides? 1. 0-25 2. 26-50 3. 51-75 4. 76-100 5. over 100	IGE average comparison average	xxxxxx (2.2) xxxxxxx (2.6) 1 2 3 4 5
13. Is there an organized program to gather ideas and reactions from parents concerning the school's instructional programs? 0. no 1. yes	IGE average comparison average	x (.3) xx (.5) 0 1
14. Is there an organized program to gather ideas and reactions from teachers concerning the school's instructional programs? 0. no 1. yes	IGE average comparison average	xxxx (.9) xxxx (.8) 0 1
15. Approximately what percentage of your time is used as instructional leader in your school? 1. 0-20% 2. 21-40% 3. 41-60% 4. 61-80% 5. 81-100%	IGE average comparison average	xxxxxxx (2.6) xxxxxxxx (2.8) 1 2 3 4 5
16. Do you attend grade-level, unit, or comparable meetings? 1. never 2. almost never 3. sometimes 4. almost always 5. always	IGE average comparison average	xxxxxxxxxx (3.3) xxxxxxxxxxx (3.8) 1 2 3 4 5
17. If and when you do attend grade-level, unit, or comparable meetings, do you view them as being an integral part of the organizing and planning being done for instructional purposes? 1. unnecessary 2. usually unnecessary 3. sometimes necessary 4. usually necessary 5. always necessary	IGE average comparison average	xxxxxxxxxxxxxx (4.4) xxxxxxxxxxxxx (4.5) 1 2 3 4 5
18. How well do you think your school organizational pattern serves the needs of your students? 1. very poorly 2. poorly 3. adequately 4. well 5. very well	IGE average comparison average	xxxxxxxxxxxxx (4.3) xxxxxxxxxxxx (4.0) 1 2 3 4 5

ITEMS	RESPONSES
19. How satisfying in a professional sense do you think your school organizational pattern is for your teachers? 1. very unsatisfying 2. unsatisfying 3. somewhat satisfying 4. satisfying 5. very satisfying	
The following scale was used to rate items 34-45. 1. completely disagree 2. disagree 3. no opinion 4. agree 5. completely agree	
34. The people in IGE have been of assistance to you and your staff in implementing the program.	
35. The materials provided for IGE have been of assistance to you and your staff in implementing the program.	

Note: Items 20 - 33 and items 36 - 45 of the Principal Questionnaire were intended to collect information on programs other than IGE. Results for these items are not provided in this IGE report.

APPENDIX L

INSTRUMENT REPORT

PRINCIPAL QUESTIONNAIRE REACTION SHEET REPORT

Date/Period of Administration: October-November, 1973
Population: The eleven principals of the IGE schools and the eleven principals of the Comparison schools. Six of the eleven IGE principals made some comment on the reaction sheet, and nine of the Comparison school principals made some comment.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

Individually Guided Education (IGE) Program
Principal Questionnaire Reaction Sheet Report

In the fall of 1973, a questionnaire was sent to the principals of the eleven IGE schools and the eleven Comparison schools. Attached to the questionnaire was a reaction sheet on which they could comment, telling what they were pleased about and what they were displeased about. Six of the eleven IGE principals made some comment, and nine of the eleven Comparison school principals made some comment. Because they could freely respond, no objective was specified beforehand. This report will deal with their responses.

More IGE and Comparison school principals responded that they were pleased about the following two items: their teachers and the support of the parents. Most of the other items were mentioned only once. Table 1 lists all the items with which the IGE and Comparison school principals are pleased.

The major item which displeases the IGE and Comparison school principals is the lack of instructional aides. This lack is mentioned in conjunction with the lack of proper funding by AISD for materials and for other supportive personnel. Except for comments made by two Comparison school principals concerning overcrowding, all of the other comments were made only once. All comments about the things which displease the principals are listed in Table 2.

TABLE L-1

WHAT PRINCIPALS LIKE MOST

IGE Principals

Number of IGE principals responding - 6

Cooperativeness and dedication of teachers - 3
Support of parents - 3
IGE - 1
A great degree of individualization - 1
Our ability to recover after a trying year last year - 1
Freedom to be innovative - 1
Happy atmosphere between teachers and students - 1
Active interest of students in school - 1
Responses of visitors when they come to the school - 1
Self-satisfaction in evaluation of responsibilities - 1
Yes - 1
Support of PTA - 1
Title I - 1

Comparison School Principals

Number of Comparison school principals responding - 9

Ability and cooperation of teachers - 7
Parents' participation and interest - 5
Instructional program - 2
Custodial staff - 2
Good teacher-parent relationship - 1
Good teacher-student relationship - 1
Teacher-pupil ratio - 1
Team teaching - 1
Office staff - 1
High degree of student interest in learning - 1
Good organization - 1
Possibility for innovation for entire school - 1
Resource center - 1
Beautiful bulletin boards - 1
Attractive building - 1
Administrative support - 1
PTA - 1
Kindergarten program - 1
Breakfast program - 1
Title I - 1
Dr. Guzak's program - 1
Title I reading program - 1
Tutorial reading program - 1
Bilingual program K-3 - 1

TABLE L-2

WHAT PRINCIPALS ARE DISPLEASED ABOUT MOST

IGE Principals

Number of IGE principals responding - 6

Insufficient AISD support for clerical and instructional aides - 2
Insufficient AISD financing for materials - 1
Lack of AISD support for innovation - 1
Too few resource persons for continued, in-depth pursuit of concerns - 1
Difficulty in having a lot of changes at once - 1
Turnover in inexperienced teachers - 1
Lack of continuum in math strands and skills - 1
Not enough PR with parents - 1
Lack of full-time principal - 1

Comparison School Principals

Number of Comparison school principals responding - 9

Lack of aides - 2
Lack of counselors - 2
Overcrowded - 2
Lack of appropriate instructional materials - 2
Lack of student teachers - 1
Lack of resource people - 1
Inequitable funding of Title I programs according to state policy - 1
L.S.T. not working at desired level - 1
Discriminated against because our school is not an IGE school - 1
Not enough input or work by supervisors of various programs - 1
Lack of program space - 1
No - 1
Intercom not working - 1
Gang restrooms - 1
Roof leaking in several places - 1

APPENDIX M

INSTRUMENT REPORT

PARENT QUESTIONNAIRE REPORT

Date/Period of Administration: January - March, 1974
Population: A 10% random sample of parents who had children in the eleven IGE schools and the eleven Comparison schools.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

DESCRIPTION OF THE PARENT QUESTIONNAIRE

How many administrations of the instrument were there?

One

Where was it administered?

By mail to home

Were there any problems with the measure or with the administration which might affect the validity of the data?

The instrument is a self-report inventory so the validity of the instrument is limited to the extent to which the respondents' perceptions are correct.

Brief description of the instrument

21 questions about various aspects of the IGE Program

What was the rationale for the instrument?

To obtain the parents' views about aspects of the IGE Program

Who developed the instrument?

Staff of the Office of Evaluation

How was the instrument developed?

Derived from the objectives of the IGE Program with which the parents had some familiarity.

Is the instrument standardized?

No

Is there any information regarding the reliability and validity of the instrument?

No

PARENT QUESTIONNAIRE REPORT

One activity of the IGE evaluation has been a survey of parents in the eleven IGE schools and the eleven Comparison schools. This survey was designed to gather data relative to the objectives blocked on the Program Objectives Overview as shown on the following page. Responses to the items on the questionnaire are shown by percentages in Appendix A to this report.

On the majority of items (14 out of 17), there are not any statistically significant distribution differences between the responses made by the parents from IGE schools and those made by the parents from Comparison schools. These items include questions concerning the parents' feelings about the school (items 3,4,5,6, and 9) and concerning the characteristics of the child (items 8,10,11,12,14,15,16,20, and 21). There are some slight differences in some of these items and these will be noted below. However, it can be concluded that the parents in both types of school feel highly positive toward school and highly comfortable with their children's teacher. No real differences are observed between IGE and Comparison schools in this regard. In addition, the parents report that children from both types of school like to go to school just as much; they see themselves (their self-image) in the same way; they accept responsibility in the same amounts; they do their homework in the same way; they have the same general knowledge of the world; and they have been privately tutored in the same amount.

Two of the three items which do register a statistically significant distribution difference concern parent activity in the schools. First, more

TABLE M-1

PROGRAM OBJECTIVES OVERVIEW

Needs	Outcome Objectives	Process Objectives	Input Objectives	Project Description
Not documented	Affective 1. Increased positive attitude by students toward school 2. Improved social and emotional adjustment by students 3. Increased independence in student learning behaviors	Affective (All of the following process objectives are applicable for each of the outcome objectives in the affective domain.) 1. Effective use of inter-class grouping 2. Use of a variety of instructional materials 3. Differentiated student assignments 4. Differentiated tutoring 5. Effective disciplinary procedures 6. Effective process implementation 7. Effective parental support	Affective (All of the following input objectives are applicable for each of the outcome objectives in the affective domain.) 1. Balanced assignment of students and teacher to units 2. Information-sharing 3. Professional development 4. Additional training 5. Communication with parents	Not documented
	Cognitive 4. Increased student achievement	Cognitive (All of the following process objectives are applicable for each of the outcome objectives in the cognitive domain.) 1. Effective use of inter-class grouping 2. Use of a variety of instructional materials 3. Differentiated student assignments 4. Differentiated tutoring 5. Effective disciplinary procedures 6. Effective process implementation 7. Effective parental support	Cognitive (All of the following input objectives are applicable for each of the outcome objectives in the cognitive domain.) 1. Balanced assignment of students and teacher to units 2. Information-sharing 3. Professional development 4. Additional training 5. Communication with parents	

Comparison school parents in our sample are volunteers this year (item 7). Secondly, Comparison school parents have tried more times to get in touch with the principal or teacher (item 19). However, in spite of these differences there are no corresponding differences as shown above in the way the Comparison school parents and the IGE school parents perceive their school and the characteristics of their child. Indeed, three items seem to imply that although the IGE parents may not be as active in the schools, they believe that their schools are better in communication to parents. The first item asks how good the school's methods of communication are (item 5); the second asks how familiar the parents are with what happens in the classroom (item 6); and the third asks if they think the principal is available to talk with them concerning their child's education (item 4). All items show a slight positive trend in favor of IGE schools. None of the items, however, show statistically significant distribution differences. These somewhat contradictory results pertain to the objectives which concern communication with parents (Affective and Cognitive Input Objective 5) and the objectives which concern effective parental support (Affective and Cognitive Process Objective 7).

The third item which did show a statistically significant distribution difference is the question concerning the parents' preference for the type of classroom they prefer for their child (item 13). The parents were given four alternatives: a classroom with one teacher, a classroom with several teachers, an open area with one teacher, and an open area with several teachers. A plurality of parents from Comparison school (35%) prefer that their child be placed in a classroom with one teacher. However, a plurality of parents from IGE schools (35%) wanted their child to be placed in an open area with several teachers. Since this type of classroom structure is generally

associated with the IGE concept, this response is therefore seen to confirm the objectives of communication with parents (Affective and Cognitive Input Objective 5) and the objectives of effective parental support (Affective and Cognitive Process Objective 7).

Two other items did not show a statistically significant difference but did seem to show some differences. First, IGE parents think their children bring home and read more books (item 12). This result seems to best correspond to the objective of increased student achievement (Cognitive Outcome Objective 4). Secondly, Comparison school parents think that their children are better at writing such things as letters, school reports, and stories (item 19). This result also pertains to the objective of increased student achievement (Cognitive Outcome Objective 4).

This survey was sent to a sample of approximately 10% of each school's parents during the month of January 1974. The parents were selected by computer from the AISD's student record files. The questionnaire was written in both English and Spanish which allowed the parents to respond in whichever language they wanted. The returns that we received were 63% overall, 63% from IGE schools, and 63% from Comparison schools.

APPENDIX M-A
Parent Survey

	% of Those Responding	
	Comparison Schools	IGE Schools
I. Items pertaining to the effectiveness of the schools communication with parents.		
Item 3: Do you feel comfortable discussing your child's school work with his or her teacher(s)?		
a. do not know	1%	1%
b. no	1%	2%
c. somewhat	6%	7%
d. yes	91%	90%
Item 4: Do you feel that the principal is available to talk with you about your child's education during the school year?		
a. do not know	24%	20%
b. no	1%	2%
c. somewhat	8%	8%
d. yes	67%	70%
Item 5: Your child's school probably has several ways of telling you about your child's school work. These ways may be report cards, meetings with teachers or the principal, PTA meetings, or school open houses. How good do you think your school's methods are?		
a. not good at all	0%	0%
b. not very good	7%	4%
c. all right	29%	22%
d. fairly good	22%	25%
e. very good	41%	48%

	Comparison Schools	IGE Schools
Item 6: Your child's school probably has different ways of teaching to help your child learn. These ways may be using learning machines, having several teachers work together as a team, grouping students in different ways for different activities, or using special materials. How familiar are you with what happens in your child's classroom?		
a. I do not know what happens.	4%	4%
b. I know only a little.	18%	18%
c. I know some, but not enough.	40%	35%
d. I know enough.	37%	42%
Item 7: Have you served as a volunteer in your child's school this year?		
a. no	65%	74%
b. yes	35%	26%
Item 19: How often have you tried to get in touch with the principal or a teacher to discuss your child's work?		
a. never this school year	33%	47%
b. once this school year	27%	33%
c. twice this school year	22%	19%
d. three or more times this school year	18%	1%
II. Items pertaining to characteristics of child.		
Item 8: Does your child like to go to school?		
a. do not know	0%	0%
b. no	2%	2%
c. sometimes	16%	15%
d. yes	82%	83%

	Comparison Schools	IGE Schools
Item 10: How do you think your child feels about himself (his self-image)?		
a. do not know	3%	2%
b. very bad	0%	0%
c. bad	3%	3%
d. good	65%	66%
e. very good	28%	28%
Item 11: When your child is given school work to do at home, how does he or she do this?		
a. do not know	0%	0%
b. asks for much help	5%	4%
c. asks for some help	61%	53%
d. works on his own	18%	20%
e. never has homework	17%	22%
Item 12: About how many library books does your child bring home and read a week?		
a. none	24%	24%
b. 1 or 2	62%	62%
c. 3 or 4	12%	10%
d. 5 or 6	3%	2%
e. 7 or more	0%	3%
Item 14: How well do you think your child is able to accept responsibility?		
a. do not know	6%	2%
b. never able to accept responsibility	0%	1%
c. not often able	7%	11%
d. often able	61%	63%
e. always able	25%	22%
Item 15: Did your child have extra help at home with his school work from someone outside your family (a tutor) last summer?		
a. no	97%	95%
b. yes	3%	5%

	Comparison Schools	IGE Schools
Item 16: Has your child had extra help at home with his school work from someone outside your family (a tutor) this school year?		
a. no	98%	98%
b. yes	2%	2%
Item 20: Do you feel that for his age your child's general knowledge of the world he lives in is:		
a. below average	5%	5%
b. about average	59%	59%
c. great	25%	28%
d. very great	10%	8%
Item 21: How good do you think your child is at writing such things as letters, school reports, or stories?		
a. do not know	13%	10%
b. below average	15%	14%
c. average	46%	56%
d. above average	26%	20%
III. Items pertaining to the parents' feelings.		
Item 9: How do you feel about your child's school?		
a. do not know	1%	1%
b. not good at all	0%	1%
c. not very good	4%	4%
d. fairly good	34%	32%
e. very good	60%	62%

	Comparison Schools	IGE Schools
Item 13: Would you prefer that your child be placed in:		
a. do not know	14%	13%
b. a classroom with one teacher	35%	21%
c. a classroom with several teachers	25%	24%
d. an open area classroom with one teacher	5%	4%
e. an open area classroom with several teachers	18%	35%
f. any combination of the above responses	2%	3%

APPENDIX N

INSTRUMENT REPORT

PARENT QUESTIONNAIRE REACTION SHEET REPORT

Date/Period of Administration: January-February, 1974
Population: A random sample of 10% of the parents of children who attend the eleven IGE schools and the eleven Comparison schools. 482 parents with children in IGE schools returned the questionnaire (63%). 236 made some comment on the reaction sheet (49% of the parents returning the questionnaire). 552 parents with children in Comparison schools returned the questionnaire (63%). 250 made some comment on the reaction sheet (45% of the parents returning the questionnaire).
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

PARENT QUESTIONNAIRE REACTION SHEET

In January, 1974, a questionnaire was sent to a random sample (10%) of the parents of children who attend the eleven IGE and eleven Comparison schools. The questions were designed to solicit their views concerning certain IGE Program objectives. Two questions on the questionnaire provided the parents with an opportunity to freely express their favorable and negative feelings about their school's programs. This report will deal with these two questions (reaction sheet).

482 parents with children in the IGE schools returned the questionnaire (63%). 236 made some comment on the reaction sheet (49% of the parents returning the questionnaire). 552 parents in Comparison schools returned the questionnaire (63%). 250 made some comment on these two questions (45% of the parents returning the questionnaire).

Parents of children in IGE schools respond more frequently (31 mentions) that they like the IGE Program. Moreover, IGE parents state that they like all the things at their child's school (15 mentions), and also specific aspects of the IGE Program such as children learning at their own rate (16 mentions), team teaching (6 mentions), open classroom (5 mentions), and individualization (3 mentions). Parents with children in Comparison schools also state that they like team teaching (15 mentions), grouping by ability (10 mentions), open classroom (4 mentions), and individualization (4 mentions). Parents of children in both IGE and Comparison schools frequently mention that they like their child's teacher. IGE parents make 18 mentions of this and Comparison school parents made 22 mentions of it. Parents with children in both IGE and Comparison schools also like special

subjects as well as regular classroom activities. In particular, they like music, P.E., and art. See Table N-1.

When asked about objections, complaints, or criticisms of their child's school, the parents overwhelmingly state that they have none. 88 parents of children in IGE schools indicate this and 93 Comparison school parents report it. This comment is the only one that is made specifically many times. However, several other comments can be grouped together so as to form categories of possible parent complaints. These include the school's communication with the parent, the crowding in the schools (lack of individual attention), and lunch room procedures. See Table N-2.

TABLE N-1

WHAT PARENTS OF CHILDREN IN IGE SCHOOLS LIKE BEST

IGE and Other Individualization Procedures
- IGE - 31
- Learning at the child's own rate - 16
- Team teaching - 6
- Open classroom - 5
- Giving children more responsibility - 3
- Individualization - 3
- Nongradedness - 1

Curriculum
- Music - 19
- Physical education - 8
- Reading - 7
- Use of the library - 6
- Art - 5
- Math - 4
- Speech - 2
- Social studies - 1
- Science - 1

Special programs
- Typing to help spelling - 3
- Plays - 3
- Audio-visual aids - 2
- Reading clubs - 2
- Reward points - 2
- Creative expression - 1

Teachers - 18

Everything - 15

No comment - 13

Do not know - 11

WHAT PARENTS OF CHILDREN IN COMPARISON SCHOOLS LIKE BEST

Teachers - 22

Activities for the parent - 19

Curriculum
- Curriculum related activities - 18
- Music - 15
- Physical education - 11
- Art - 7

Individualization Procedures
- Activities related to individualization - 16
- Team teaching - 15
- Ability grouping - 10
- Open classroom - 4

No comment - 16

Special programs - 12

Extracurricular activities for students - 10

Do not know - 8

Everything - 8

Parent-teacher conferences - 7

TABLE N-2

WHAT PARENTS OF CHILDREN IN IGE SCHOOLS DISLIKE MOST

Nothing - 88

School's Communication
- Report cards (A,B,C,D,F better) - 5
- Parents do not know enough of child's work - 5
- Lack of a full-time principal - 4
- New report cards - 2
- Report cards do not come out often enough - 2
- Grading sytem does not inform - 2
- At the teacher-parent conference there should be a report card too - 1
- Teachers should write out their own remarks on the report card - 1

Crowding (Lack of Individual Attention)
- High pupil-teacher ratio - 7
- Lack of adies - 4
- Overcrowded - 3
- Lack of time for teachers - 2

IGE
- Not enough work on English fundamentals - 5
- IGE - 3
- Too wide a grouping in a class - 2
- Children moving from one class to another - 2

Lunch Room Procedures
- Lunch room monitor too strict - 4
- Lack of time for lunch - 3
- Lunch period too regimented - 2

WHAT PARENTS OF CHILDREN IN COMPARISON SCHOOLS DISLIKE MOST

Nothing - 93

School's Communication
- Spankings given without parents' consent - 6
- New report cards (A,B,C,D,F better) - 5
- Teachers do not have time for parents - 4
- New report cards - 4
- Not enough communication between teacher and parents - 3
- Principal does not have time for parents - 3
- Report cards are not often enough - 3
- Teacher and principal are defensive 2
- Report cards are too vague - 2
- Teachers should write out their own remarks on report card - 1

Crowding (Lack of Individual Attention)
- Overcrowded - 5
- High pupil-teacher ratio - 4
- Not enough aides - 1
- Lack of time for teachers - 1

Lunch Room Procedures
- Too strict in the lunch room - 5
- Lunch time rushed - 4

Change in school hours - 6

N-5

APPENDIX O

INSTRUMENT REPORT

CASE STUDIES REPORT

Date/Period of Administration: January-February, 1974

Population: Two students from each of two IGE schools and two students from each of two Comparison schools. All of the students were in the fifth grade. One of the IGE schools that was observed was a Title I school as was of the Comparison schools.

Administered by: Office of Evaluation Staff

Data Collected by: Office of Evaluation Staff

DESCRIPTION OF THE CASE STUDIES

How many administrations of the instrument were there?

One

Where was it administered?

In two IGE schools and two Comparison schools

Were there any problems with the measure or with the administration which might affect the validity of the measure?

No. The case studies form is considered very valid for its intended purpose of desrcibing the various activities that a pupil is involved in. This is because the reported data was very objective and has a very direct relationship to the criteria for which the instrument is to be validated.

Training of the administrators

Degrees in education, teacher certification, experience as teachers, and experience in observing classrooms and pupils for evaluative purposes.

Description of the instrument

A table on which the observers could note the group size, the activity, the length of the activity, the materials used, the initiator of the activity, and any other relevant comments.

Rationale for the instrument

To provide a descriptive commentary on what the children are doing in the IGE and Comparison schools

Who developed the instrument?

Process Evaluators of the Office of Evaluation Staff

How was the instrument developed?

It was derived from the extensive knowledge of the Process Evaluators of how children work in the classroom and how the IGE Program was supposed to function.

Is the instrument standardized?

No

Is there any information regarding the reliability and validity of the instrument?

No

CASE STUDIES

Between January 31 and February 12, 1974, the classroom observers conducted case studies in four schools involved in the IGE evaluation. The four schools chosen were a Title I, IGE school; a non-Title I IGE school; a Title I, Comparison school; and a non-Title I Comparison school. These schools were selected in order to examine some of the concerns that parents and administrators have voiced about a child's ability to cope with individualization on the basis of his/her socio-economic background. After the schools were chosen, a fifth grade teacher was randomly selected at each of the four schools. Each teacher was asked to choose three "high" achieving students and three "low" achieving students from her class. All the children chosen were ten years old and in the fifth grade. Data concerning each child's IQ scores and California Achievement Test scores ~~was~~ were collected as well as subjective judgments made by the teacher about each child's out-going or reserved personality characteristics. The children who were finally selected for observation were chosen for two reasons. First, the two children observed at each school were one "high" and one "low" achiever in order to compare the effects of a highly individualized program and a less individualized program on children with different learning abilities. Second, the children selected at Title I schools were those the teacher considered outgoing in order to answer the concern that outgoing children from a low socio-economic background are repeatedly reprimanded and therefore do not spend as much time learning as quieter children would. The children selected at non-Title I schools were considered reserved by their teacher in order

to answer the concern that reserved children of a moderate socio-economic background are ignored by their teachers and therefore do not have as much contact with adults as more out-going children would.

Before the case studies were done, only generalized characteristics of the child's activities in the classroom were identified for observation. The case study format (see following page, Figure O-1) was designed to collect information about these general concerns and to provide space for additional specific comments. The information collected has been divided into 14 specific categories. No specific evaluation objectives were identified to be answered by the case studies. The main purpose of the case studies is to provide a descriptive commentary on what happens to children in ICE and Comparison schools. The information collected is presented in Table O-1 and is followed by a comparison/contrast description.

FIGURE I

CASE STUDY FORMAT

AUSTIN INDEPENDENT SCHOOL DISTRICT
Division of Instruction and Development
Department of Educational Development
Office of Evaluation
Case Study

Time	Group Size	Activity	Materials Used	Initiator of Activity	Comments
8:30					
8:35					
8:40					
8:45					
8:50					
8:55					
9:00					
9:05					
9:10					

TABLE I

CASE STUDIES: MATERIALS AND ACTIVITIES OBSERVED

Information Collected / Child Observed	Duration of Time (# min.) Scheduled for Subjects (345 minutes per school day not including lunch)	Duration of Time (# min.) Spent Actively Working — Working in Texts, Group Discussion, Performing Experiments, Checking Work	Duration of Time (# min.) Spent Passively Working — Listening to Stories, Instructions, Tapes, etc., Watching Films	Duration of Time (# min.) Spent Idle — Changing Classes, Talking to Friends (Not Tutoring)
High Achieving, "Out-going" Boy in a Title I, IGE School	310	230	70	45
Low Achieving, "Out-going" Girl in a Title I, IGE School	300	215	65	65
High Achieving, "Reserved" Boy in a Non-Title I, IGE School	290	230	60	55
Low Achieving, "Reserved" Boy in a Non-Title I, IGE School	310	240 ★	60 ★	45 ★
High Achieving, "Out-going" Boy in a Title I, Comparison School	285	100	120	125
Low Achieving, "Out-going" Girl in a Title I, Comparison School	285	90	135	120
High Achieving, "Reserved" Girl in a Non-Title I, Comparison School	325	215	45	100
Low Achieving, "Reserved" Girl in a Non-Title I, Comparison School	295	200	75	75

★ Indicates Large Differences in the Column

TABLE I, CONT.

CASE STUDIES: MATERIALS AND ACTIVITIES OBSERVED

Information Collected / Child Observed	Number of Different Adults the Child Worked with During the School Day	Duration of Time (# min.) Spent in Direct Contact with Adults	Number of Reprimands Received by the Child	Duration of Time (# min.) Spent Tutoring or Being Tutored by Another Child	Duration of Time (# min.) Spent in Other Kinds of Contact with Other Children
High Achieving, "Out-going" Boy in a Title I, IGE School	10	57	2	6	148
Low Achieving, "Out-going" Girl in a Title I, IGE School	7	36	0	0	123
High Achieving, "Reserved" Boy in a Non-Title I, IGE School	5	34	0	7	113
Low Achieving, "Reserved" Boy in a Non-Title I, IGE School	7	23	2	15	90
★	★	★	★	★	★
High Achieving, "Out-going" Boy in a Title I, Comparison School	7	9	7	10	61
Low Achieving, "Out-going" Girl in a Title I, Comparison School	6	15	1	15	65
High Achieving, "Reserved" Girl in a Non-Title I, Comparison School	3	17	3	12	131
Low Achieving, "Reserved" Girl in a Non-Title I, Comparison School	2	8	0	2	31

★ Indicates Large Differences in the Column

TABLE I, CONT.

CASE STUDIES: MATERIALS AND ACTIVITIES OBSERVED

Information Collected / Child Observed	Number of Subjects Studied	Number of Transitions Made from One Activity to Another by the Child	Number of Activities Initiated by an Adult	Number of Activities Initiated by the Child	Number of Times the Child Worked Individually (Not in a Group)	Average Group Size
High Achieving, "Out-going" Boy in a Title I, IGE School	10	9	17	12	8	8
Low Achieving, "Out-going" Girl in a Title I, IGE School	9	10	13	11	6	8
High Achieving, "Reserved" Boy in a Non-Title I, IGE School	10	11	19	12	5	13
Low Achieving, "Reserved" Boy in a Non-Title I, IGE School	9	11	13	5 ★	7	19 ★
High Achieving, "Out-going" Boy in a Title I, Comparison School	8	12	20	5	6	24
Low Achieving, "Out-going" Girl in a Title I, Comparison School	8	10	13	2	3	15
High Achieving, "Reserved" Girl in a Non-Title I, Comparison School	8	11	14	7	5	13
Low Achieving, "Reserved" Girl in a Non-Title I, Comparison School	8	8	14	3	6	12

★ Indicates Large Differences in the Column

TABLE I, CONT.

CASE STUDIES: MATERIALS AND ACTIVITIES OBSERVED

Child Observed / Information Collected	Types of Materials Used by the Child
High Achieving, "Out-going" Boy in a Title I, IGE School	Contract for Reading, English, Math Texts for Reading, English, Spelling, Math Workbooks for Reading, Spelling Self-scoring Materials for Reading, Reading Resource, English AV Materials for Reading, Science, Library, Media Additional Materials Used: Library Books, Dictionary, X-Ray Prints, Bones, Educational Games, Puzzles, Beads, String
Low Achieving, "Out-going" Girl in a Title I, IGE School	Workbooks for Reading Self-scoring Materials for Math AV Materials for English Additional Materials Used: Dictionary, Magazines, Educational Games, Guitar, Beads String, Paper, Glue, Scissors, Ball
High Achieving, "Reserved" Boy in a Non-Title I, IGE School	Contract for Language Arts Texts for Spelling, Math Self-scoring Materials for Science AV Materials for Math, Science Additional Materials Used: Library, Card Catalog, Bottle, Tray, Water, Straws, Gym, Outdoors, Ball, Paper Bags, Paper, Glue, Scissors, Crayons
Low Achieving, "Reserved" Boy in a Non-Title I, IGE School	Contract for Spelling, Math Text for Math Workbook for Spelling Self-scoring Materials for Spelling, Math, Science AV Materials for English, Spelling, Math, Science, Music Additional Materials Used: Library Book, Bottle, Tray, Water, Straws, Outdoors ★
High Achieving, "Out-going" Boy in a Title I, Comparison School	Contract for Reading Texts for Reading, English, Spelling, Math Workbook for Reading AV Materials for Math, Music, Arts and Crafts Additional Materials Used: Gym, Piano, Paper, Glue, Scissors
Low Achieving, "Out-going" Girl in a Title I, Comparison School	Text for Spelling Workbook for Spelling Self-scoring Materials for Social Studies AV Materials for English, Spelling, Arts and Crafts Additional Materials Used: Educational Games, Gym, Piano, Paper, Glue, Scissors
High Achieving, "Reserved" Girl in a Non-Title I, Comparison School	Texts for Reading, Math, Social Studies Workbooks for Reading, Math Self-scoring Materials for Spelling, Math AV Materials for Music Additional Materials Used: Library Book, Outdoors
Low Achieving, "Reserved" Girl in a Non-Title I, Comparison School	Texts for Reading, Math, Social Studies Workbooks for Reading, Math Self-scoring Materials for Reading, Spelling, Math AV Materials for Reading, Music Additional Materials Used: Library Book, Ruler, Compass

★ Indicates Large Differences in the Column

The information gathered in the case studies can be divided into two categories: variables that show very small differences between IGE and Comparison schools and variables that show fairly large differences. The variables that show small or no differences are as follows:

Number of Subjects Studied
- Title I, IGE School . . . . . 10 and 9
- Non-Title I, IGE School . . . . . 10 and 9
- Title I, Comparison School . . . . . 8 and 8
- Non-Title I, Comparison School . . . 8 and 8

Duration of Time Scheduled for Subjects
- Title I, IGE School . . . . . 300 and 300 minutes
- Non-Title I, IGE School . . . . . 290 and 310 minutes
- Title I, Comparison School . . . . 305 and 285 minutes
- Non-Title I, Comparison School . . 325 and 295 minutes

Number of Transitions Made from One Activity to Another by the Child
- Title I, IGE School . . . . . 9 and 10
- Non-Title I, IGE School . . . . . 11 and 11
- Title I, Comparison School . . . . 12 and 10
- Non-Title I, Comparison School . . 11 and 8

Number of Activities Initiated by an Adult
- Title I, IGE School . . . . . 17 and 18
- Non-Title I, IGE School . . . . . 19 and 13
- Title I, Comparison School . . . . 20 and 18
- Non-Title I, Comparison School . . 14 and 14

Number of Times the Child Worked Individually (Not in a Group)
- Title I, IGE School . . . . . 8 and 6
- Non-Title I, IGE School . . . . . 5 and 7
- Title I, Comparison School . . . . . 6 and 3
- Non-Title I, Comparison School . . . 5 and 6

In IGE and Comparison schools, the average amount of time scheduled for studying subjects was equal (IGE schools: 304 minutes average; Comparison schools: 304 minutes average). The average number of subjects studied throughout the day was also nearly equal (IGE schools: 9.5 subjects average; Comparison schools: 8 subjects average). While IGE children studied one or two more subjects than children in Comparison schools, the amount of time they were scheduled to be

studying was the same. The average number of transitions made between activites by IGE and Comparison school children was also equal (IGE schools: 10 transitions average; Comparison schools: 10 transitions average). This information taken together indicates that IGE and Comparison school children have about the same kinds of schedules, the same number of subjects to study, and the same number of transitions from one subject to another. The average number of activities initiated by an adult (teacher, student teacher, aide, etc.) is also the same for IGE and Comparison school children (IGE schools: 16 activities average; Comparison schools: 16 activities average). A major concern of parents and administrators about the IGE Program has been that children in the IGE schools have less teacher direction than children in regular school programs. However, the children in IGE schools are scheduled to study approximately the same number of subjects for an equal amount of time during the day as Comparison school children do. The observations also show that the teachers in either an IGE or Comparison school give directions to their students approximately the same number of times.

The information collected concerning the number of times a child works alone, not in a group, helps to answer another concern of parents and administrators. The average number of times a child works individually is almost the same in IGE and Comparison schools (IGE schools: 6 times average; Comparison schools: 5 times average). This means that children in IGE schools do not work alone; they do have contact with their peers while they study.

The variables that show large differences between both IGE schools

and both Comparison schools are as follows:

Duration of Time Spent Idle	
Title I, IGE School	45 and 65 minutes
Non-Title I, IGE chool	55 and 45 minutes
Title I, Comparison School	125 and 120 minutes
Non-Title I, Comparison School . .	100 and 75 minutes
Duration of Time Spent in Direct Contact with Adults	
Title I, IGE School	57 and 36 minutes
Non-Title, IGE School	34 and 23 minutes
Title I, Comparison School	9 and 17 minutes
Non-Title I, Comparison School . .	17 and 8 minutes
Duration of Time Spent in Other Kinds of Contact with Other Children (Not Tutoring)	
Title I, IGE School	148 and 123 minutes
Non-Title I, IGE School	113 and 90 minutes
Title I, Comparison School	61 and 65 minutes
Non-Title I, Comparison School . .	131 and 31 minutes
Number of Activities Initiated by the Child	
Title I, IGE School	12 and 11
Non-Title I, IGE School	12 and 5
Title I, Comparison School	5 and 2
Non-Title I, Comparison School	7 and 3

In the IGE schools, children spent some time being idle (52 minutes average), but in the Comparison schools children were idle much more of the time (105 minutes average). The amount of time scheduled for subject activities is nearly the same in IGE schools as Comparison schools, yet the Comparison school children who were observed spent on the average twice as much time being idle as did the IGE children who were observed.

The average of the amount of time spent in direct contact with adults indicates that the IGE school children have three times as much contact with adults in their schools as do children in Comparison schools (IGE schools: 37 minutes average; Comparison schools: 12 minutes average). While children in IGE and Comparison schools are given about the same amount of direction by their teacher, children in IGE schools spend an average of 25 more minutes in direct contact with their teachers.

The average amount of time students in IGE schools spend communicating with their peers (not tutoring) is nearly twice as much as children in Comparison schools (IGE schools: 118 minutes average; Comparison schools: 65 minutes average). Children in IGE schools, who do not spend as much time being idle as children in Comparison schools, spend nearly twice as much time talking with other children both while they are idle and while they are working together.

The number of activities initiated by a child in an IGE school averages more than twice as many as those initiated by a child in a Comparison school (IGE schools: 10 activities average; Comparison schools: 4 activities average). While IGE and Comparison school students have about the same amount of guidance from their teachers, the number of activities the IGE school children have some control over averages twice as many as Comparison school children.

The types and amounts of materials used by children (see Table O-1) is more various and larger than in Comparison schools. While the children in both IGE and Comparison schools study about the same number of subjects for about the same amount of time, a simple tally of the kinds of materials used shows that IGE school students use more different kinds of materials than Comparison school pupils.

Other variables show large differences between three of the schools and the fourth one. These will be discussed in the order they are shown on Table O-1.

Duration of Time Spent (Number of Minutes) Actively Working	
Title I, IGE School	230 and 215
Non-Title I, IGE School	230 and 240
Title I, Comparison School	100 and 90
Non-Title I, Comparison School	215 and 200

Duration of Time Spent (Number of Minutes) Passively Working

Title I, IGE School	70 and 65
Non-Title I, IGE School	60 and 60
Title I, Comparison School	120 and 135
Non-Title I, Comparison School	45 and 75

Number of Different Adults the Child Worked With During the School Day

Title I, IGE School	10 and 7
Non-Title I, IGE School	5 and 7
Title I, Comparison School	7 and 6
Non-Title I, Comparison School	3 and 2

Number of Reprimands Received by the Child

Title I, IGE School	2 and 0
Non-Title I, IGE School	0 and 2
Title I, Comparison School	7 and 1
Non-Title I, Comparison School	3 and 0

Duration of Time Spent (Number of Minutes) Tutoring or Being Tutored by Another Child

Title I, IGE School	6 and 0
Non-Title I, IGE School	7 and 15
Title I, Comparison School	10 and 15
Non-Title I, Comparison School	12 and 2

Average Group Size

Title I, IGE School	8 and 3
Non-Title I, IGE School	13 and 19
Title I, Comparison School	24 and 15
Non-Title I, Comparison School	13 and 12

Comparisons between the Title I, IGE School, the Non-Title I, IGE School, and the Non-Title I, Comparison School versus the Title I, Comparison School can be drawn in the category of the duration of time spent both actively working and passively working. In both IGE schools observed, the children spent much less time idle that those in the Comparison schools. Closer inspection of the kinds of things the children did shows that active and passive work is done for nearly equal amounts of time in the IGE schools and in the non-Title, Comparison school. Meanwhile the Title I, Comparison students average a third as much active work time and twice as much passive work time as the other pupils observed. While non-Title I schools represent

a kind of norm or standard for other schools to follow in terms of academic excellence and the amount of work that children do, IGE schools put a special emphasis on work and the child's role as the initiator of his work. This then appears to enable the IGE children in Title I schools to work as actively as those in non-Title I schools.

The number of different adults the students had contact with during the day is fairly large except for those in the non-Title I Comparison school. While the IGE and Title I school children had contact with many adults, the children in the non-Title I, Comparison school had contact with only a few adults. The IGE Program stresses that children should work with teams of teachers who know them; the Title I Program provides many adults with special expertise to work with the children; the non-Title I, Comparison school represent a more "traditional" school situation in which the students work mainly with one teacher (although they may have special teachers for reading, math, music, art, or phsical education).

The number of reprimands the children received in the Title I, Comparison school (4 reprimands average) is greater than in the other schools (1 reprimand average). All the children observed in the Title I schools were considered out-going by their teachers, yet the Title I, IGE pupils received about the same number of reprimands as the non-Title I school children (average of 1).

The amount of time children were tutoring or being tutored by peers is less in the Title I, IGE school than in the other three schools (3 minutes average to 10 minutes average). While tutoring is a major focus of the IGE Program and adults do work more directly with students more often in IGE schools, peer tutoring does not seem to have been fully incorporated into the Title I, IGE school program.

However, the average group size in this school is less (8 people average) than in the other schools (16 people average) and this may allow the students in this school to act as tutors more easily than in the other schools.

The purpose of these case studies was not to draw any conclusions concerning the objectives of the IGE Program, but rather to provide a narrative summary of some of the activities of children in IGE and Comparison schools. The similarities that have been documented in this report are in many ways surprising; the differences that were found were striking. Even though the case studies represent a small sample of schools (4) and children (8), they provide a comprehensive view of what happens to children, what they do in school, and how they do it.

APPENDIX P

METHODS AND RESULTS FOR INTERRELATIONSHIPS BETWEEN PUPIL PRODUCTS AND INPUTS/PROCESSES

Appendix P

Methods and Results for
Interrelationships Between Pupil Products and
Inputs/Processes

The interrelationship studies summarized in Section VI are based on school means. For each of the 11 IGE schools and the 11 Comparison schools, the school mean for each product measure and for each input and process measure was determined. To examine each relationship between a product and an input or process, the correlation between the two measures was determined with each measure represented by the 22 means, one per school.

In some instances data for some of the schools was not available and the correlations were determined from smaller numbers of school means.

Section V.d.2 (e) of the IGE Evaluation Design specifies a series of linear models to consider in examining the interrelationships. These models were designed to incorporate the fact that different units and classes would be characterized by different degrees of implementation of the various processes and inputs. However, after the degree of implementation data was collected, it was realized that not only do individual classes and units vary with regard to degree of implementation, but also the IGE units overall are different from the Comparison school classes. The linear models were not designed to incorporate such overall differences as do occur between the IGE and the Comparison schools. There is no known method of modifying the models to incorporate such group differences and utilizing the models despite such differences can easily result in falacious conclusions. Accordingly, these linear models were not utilized and only the simpler correlational studies are reported here. Tables P-1 through P-12 display the summary data for these correlational analyses.

Correlations Between
Inputs/Processes and
California Achievement Test
Mathematics Subscale

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	.54 *	.16	
Variety of Instructional Materials	.61*	-.05	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy	.39*	-.05	
Differentiated Assignments	.60*	-.07	
Tutoring	.35	-.15	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	.63*	.04	
INPUTS			
Balanced Teacher and Pupil Assignments	.34		
Information-Sharing	.16		
Professional Development	-.09		
Need for Additional Training	- .[illegible]*		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the $\alpha = .05$ level.

Note 2. 20 schools were considered.

Table P-1

Correlations Between
Inputs/Processes and
California Achievement Test
Verbal/Comprehension Subscale

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	.56*	.23	
Variety of Instructional Materials	.62*	.03	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy	.37	.01	
Differentiated Assignments	.63*	.04	
Tutoring	.44*	-.02	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	.58*	.08	
INPUTS			
Balanced Teacher and Pupil Assignments	.33		
Information-Sharing	.18		
Professional Development	-.01		
Need for Additional Training	-.63*		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 20 schools were considered.

Table P-2

Correlations Between
Inputs/Processes and
Pupil Attitude Towards School
Primary level Fall Semester

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	-.35	-.30	
Variety of Instructional Materials	-.40*	-.37	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy	-.33	-.41	
Differentiated Assignments	-.31	-.37	
Tutoring	-.18	-.27	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	-.29	-.19	
INPUTS			
Balanced Teacher and Pupil Assignments	-.23		
Information-Sharing	-.22		
Professional Development	-.38*		
Need for Additional Training	-.25		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 20 schools were considered.

Table P-3

Correlations Between
Inputs/Processes and
Pupil Attitude Towards School
(Primary, Spring)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping			.58*
Variety of Instructional Materials			.15
Availability of Instructional Materials			.34
Usage of Instructional Materials			.11
Pupil Autonomy			.06
Differentiated Assignments			.07
Tutoring			-.03
Availability of Tutoring			-.39*
Usage of Tutoring			.07
Classroom Harmony			.73*
INPUTS			
Balanced Teacher and Pupil Assignments			
Information-Sharing			
Professional Development			
Need for Additional Training			

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 20 schools were considered.

Table P-4

Correlations Between
Inputs/Processes and
Pupil Attitude Towards School
(Intermediate, Spring)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping			.45*
Variety of Instructional Materials			.21
Availability of Instructional Materials			.41*
Usage of Instructional Materials			.18
Pupil Autonomy			.42*
Differentiated Assignments			.28
Tutoring			.05
Availability of Tutoring			-.17
Usage of Tutoring			.09
Classroom Harmony			.39*
INPUTS			
Balanced Teacher and Pupil Assignments			
Information-Sharing			
Professional Development			
Need for Additional Training			

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 22 schools were considered.

Table P-5

Correlations Between
Inputs/Processes and
Pupil Attitude Towards School
(Intermediate, Fall)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	-.23	-.26	
Variety of Instructional Materials	-.43*	-.37*	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy	-.34	-.47*	
Differentiated Assignments	-.47*	-.43*	
Tutoring	-.58*	-.23	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	-.28	-.11	
INPUTS			
Balanced Teacher and Pupil Assignments	.18		
Information-Sharing	.31		
Professional Development	.08		
Need for Additional Training	.05		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 22 schools were considered.

Table P-6

Correlations Between
Inputs/Processes and
Pupil Attitude Towards Individualized Instruction
(Intermediate, Fall)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	-.11	-.30	
Variety of Instructional Materials	-.26	-.37*	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy	-.32	-.33	
Differentiated Assignments	-.15	-.33	
Tutoring	-.35	-.21	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	-.09	-.01	
INPUTS			
Balanced Teacher and Pupil Assignments	.42*		
Information-Sharing	.44*		
Professional Development	.09		
Need for Additional Training	.18		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 22 schools were considered.

Table P-7

Correlations Between
Inputs/Processes and
Pupil Attitude Towards Individualized Instruction
(Primary, Fall)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	-.32	-.33	
Variety of Instructional Materials	-.47*	-.42*	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy	-.15	-.45*	
Differentiated Assignments	-.22	-.41*	
Tutoring	-.37	-.33	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	-.21	-.22	
INPUTS			
Balanced Teacher and Pupil Assignments	-.22		
Information-Sharing	-.05		
Professional Development	-.41*		
Need for Additional Training	-.23		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 20 schools were considered.

Table P-8

Correlations Between
Inputs/Processes and
Pupil Attitude Towards Individualized Instruction
(Intermediate, Spring)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping			-.18
Variety of Instructional Materials			-.13
Availability of Instructional Materials			.05
Usage of Instructional Materials			-.16
Pupil Autonomy			.13
Differentiated Assignments			.03
Tutoring			-.12
Availability of Tutoring			-.30
Usage of Tutoring			-.07
Classroom Harmony			.07
INPUTS			
Balanced Teacher and Pupil Assignments			
Information-Sharing			
Professional Development			
Need for Additional Training			

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 22 schools were considered.

Table P-9

Correlations Between
Inputs/Processes and
Pupil Attitude Towards Individualized Instruction
(Primary, Spring)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping			.53*
Variety of Instructional Materials			.05
Availability of Instructional Materials			-.26
Usage of Instructional Materials			.00
Pupil Autonomy			-.03
Differentiated Assignments			.00
Tutoring			-.06
Availability of Tutoring			-.35
Usage of Tutoring			.03
Classroom Harmony			.65*
INPUTS			
Balanced Teacher and Pupil Assignments			
Information-Sharing			
Professional Development			
Need for Additional Training			

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 20 schools were considered.

Table P-10

Correlations Between
Inputs/Processes and
Pupil Autonomy
(Teacher Questionnaires)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping		.49*	
Variety of Instructional Materials		.38*	
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy			
Differentiated Assignments		.45*	
Tutoring		.11	
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony		.21	
INPUTS			
Balanced Teacher and Pupil Assignments			
Information-Sharing			
Professional Development			
Need for Additional Training			

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 22 schools were considered.

Table P-11

Correlations Between
Inputs/Processes and
Pupil Autonomy
(Classroom Observation Checklist)

PROCESSES	Input/Process Instrument		
	Teacher Questionnaire	Classroom Observation Checklist	
		Fall	Spring
Intraclass Grouping	.33		
Variety of Instructional Materials	.30		
Availability of Instructional Materials			
Usage of Instructional Materials			
Pupil Autonomy			
Differentiated Assignments	.35		
Tutoring	.48*		
Availability of Tutoring			
Usage of Tutoring			
Classroom Harmony	.00		
INPUTS			
Balanced Teacher and Pupil Assignments	-.17		
Information-Sharing	-.14		
Professional Development	.20		
Need for Additional Training	.01		

Note 1. Correlation coefficients marked with an asterick (*) are significantly different from zero at the = .05 level.

Note 2. 22 schools were considered.

Table P-12

APPENDIX Q

CTB/McGRAW-HILL

PRESCRIPTIVE READING INVENTARY

Date/Period of Administration:	October and April of the 1973-1974 school year
Population:	Identified Title I students in grades 2 - 5
Administered by:	Teachers
Data Collected by:	Department of Student Development

DESCRIPTION OF THE PRESCRIPTIVE READING INVENTORY

To whom was the instrument given?

All identified Title I students on grades 1 through 5 of Title I schools.

When was the instrument administered?

In October 1973 for students in grades 2-5; in April 1974 for students of all grades.

Where was the instrument administered?

In the classroom.

Who administered the instrument?

Classroom Teachers

Special training of test administrators:

School counselors attended a 1½ hour workshop, conducted by the test publishers, on administration of the PRI. Some counselors have expressed the view that this workshop was inadequate. The extent to which appropriate information in the test administration was passed to teachers is not documented.

Problems with the administration which might affect the validity of the data:

In at least some schools in the district, some teachers administered the entire instrument in one 3 hour session, some administered the instrument in two sessions on consecutive days, and others administered the test as ½ hour sessions per day until the administration was completed. The extent to which this diversity of administration existed in the IGE and Comparison is not documented.

Brief description of the instrument:

The Prescriptive Reading Inventory is a criterion-referenced test which assesses pupil performance in each of several different reading objectives in the general areas of sound and symbol recognition, phonic analysis, structured analysis, translation, and literal, interpretative, and critical comprehension.

Who developed the instrument?

CTB/McGraw-Hill

Is the instrument standardized?

Standardized administrative procedures are provided in the examiner's manual.

Reliability and validity of the instrument:

A Technical Report is scheduled for publication during the current year. A copy of this report is not yet available. Reliability and validity cannot be reported until a copy of this report is received.

APPENDIX Q
PRESCRIPTIVE READING INVENTORY REPORT

During the fall and spring semesters, all indentified Title I students in grades 2 through 5 of Title I schools were administered the Prescriptive Reading Inventory. Of the grades for which the data is presently available (2-4), only for students in the fourth grade did all Title I schools administer the same level of test to all students of the grade. Consequently, not all performance scores for pupils of the second grade and of the third grade are comparable. For this reason, the analyses reported in this Appendix are restricted to fourth grade students.

The Sign Test was utilized to determine if the IGE school students were more successful in improving their perfomance across all objectives than were students of Comparison schools. More explicitly, the following null hypothesis was tested:

> The median difference between (1) the percentage of IGE students who improve from fall to spring across all objectives and (2) the percentage of Comparison school students who improve from fall to spring across all objectives, is 0.

The percentage of fourth grade IGE students who improved their performance from fall to spring was greater than the comparable percentage for Comparison school students for 28, or 66%, of the 42 objectives of the PRI test. With this data, the null hypothesis stated above was rejected at the $\alpha = .05$ level. Thus, fourth grade IGE students that were identified Title I students are more successful than comparable students in Comparison schools in improving their performance during the school year. Table Q-1 displays the data utilized in this analysis.

The extent to which these results can be generalized is limited by the following factors. First, the results are applicable only for identified Title I students. Whether or not similar results would be obtained for other students is unknown. Second, the results are based on data obtained from only four IGE schools and four Comparison schools. When the number of schools is small, generalization must be limited because (1) the schools utilized may be a non-typical subset of schools, and (2) the effect of a possible mis-matching of Comparison schools with IGE schools is more likely to affect the results for a small set of schools than for a large set of schools.

TABLE Q - 1

Percentage of 4th Grade Pupils
Improving from Fall to Spring
on the Prescriptive Reading Inventory

Objective Number	Name	IGE	Comparison	Difference[1]
9	Silent Letters	.63	.56	+
13	Variant Vowel Sounds: Digraph, Diphthong	.40	.42	-
14	Phonetic Parts: Variant Sounds	.25	.35	-
15	Phonetic Parts: Blending	.32	.39	-
22	Pronouns: Referent	.12	.20	-
25	Compunds: Forming	.65	.43	+
30	Sentence Building: Phrase Selection	.32	.27	+
31	Phrase Information	.27	.29	-
32	Affixes: Identifying Prefixes, Suffixes	.26	.28	-
33	Affixes: Building Words	.21	.23	-
34	Defining Affixed Words	.42	.51	-
37	Punctuation: Exclamation Point	.35	.33	+
45	Meaning of Related Words in Context	.42	.40	+
46	Most Precise Word in Context	.30	.35	-
48	Word Definition in Context	.42	.24	+
49	Word Definition in Isolation	.36	.27	+
51	Multi-Meaning Words and Synonyms	.45	.29	+
52	Synonyms: Selection	.47	.32	+
53	Antonyms: Selection	.37	.22	+
54	Homonyms: Selection	.43	.27	+
57	Event Sequence	.26	.17	+
58	Story Telling	.29	.20	+
59	Story Detail: Recall or Descriptive Words	.40	.22	+
60	Story Detail: Recall by Parts	.31	.29	+
61	Story Detail: Identify True Statement	.27	.16	+
62	Cause or Effect	.03	.00	+
63	Inference	.29	.22	+
64	Conclusion: Formation	.18	.22	-
66	Predicting Future Action	.16	.17	-
67	Main Idea: Summary, Title or Theme	.08	.05	+
70	Character Analysis: Descriptive Words, Traits or Attitudes	.13	.14	-

TABLE Q-1 (cont.)

Objective Number	Name	IGE	Comparison	Difference[1]
71	Descriptive Words or Phrases	.30	.21	+
72	Sensory Imagery	.27	.35	-
73	Idioms or Figures of Speech	.22	.25	-
75	Simile	.15	.07	+
76	Metaphor	.14	.10	+
77	Mood	.28	.19	+
78	Time Span and Period	.18	.16	+
80	Literary Forms: Fable	.21	.14	+
83	Reality and Fantasy	.28	.18	+
84	Reality and Fantasy: Possibility	.32	.26	+
89	Author Purpose	.14	.08	+

Note 1. +: IGE percentage is greater than the Comparison percentage.
-: IGE percentage is less than the Comparison percentage.

APPENDIX R

INSTRUMENT REPORT

LIBRARIAN QUESTIONNAIRE

Date/Period Administered: April, 1974
Population: Eleven IGE and eleven Comparison school librarians. One IGE school librarian and one Comparison school librarian did not return the questionnaire. Therefore, their "matched" schools were also withdrawn from analysis. This then eliminated a total of four schools, leaving nine IGE schools and their nine "matched" Comparison schools.
Administered by: Office of Evaluation Staff
Data Collected by: Office of Evaluation Staff

DESCRIPTION OF THE LIBRARIAN QUESTIONNAIRE

How many administrations of the instrument were there?

One

Where was it administered?

In the schools

Were there any problems with the measure or with the administration which might affect the validity of the data?

No

Brief description of the instrument

There are 26 items on the questionnaire dealing with aspects of the use of the library. No objective was to be analyzed from this data.

What was the rationale for the instrument?

To obtain the views of the librarians on the uses of the library.

Who developed the instrument?

Office of Evaluation Staff in conjunction with a few librarians

Is the instrument standardized?

No

Is there any information regarding the reliability and validity of the instrument?

No

LIBRARIAN QUESTIONNAIRE

During the spring of 1974 a series of meetings by the evaluation staff was scheduled with each of the eleven IGE and the eleven Comparison schools in order to solicit from them personally additional or different ideas about what might be looked at other than what was in the design. One of the frequent suggestions was that library utilization should be examined. Therefore, several librarians were inteviewed and a questionnaire was developed. Data was then collected using the questionnaire. The tabulated results are presented in the following pages. Four schools were excluded from the analysis because of non-response, thus leaving nine IGE and nine Comparison schools to be examined. Occasionally, a respondant would not answer a question. When this occurs, the response level of course falls below nine.

Although too few responses are included to validly perform a statistical analysis, inspection does not suggest that any real differences might exist in the use of the library. There does seem to be more books available on the average in Comparison rather than in IGE schools, and more IGE schools have a "separate learning center" for audio-visual equipment that is used in conjunction with the library.

Library observation and the use of periodic library logs might be a more valid way to gather the library information in the future.

LIBRARIAN QUESTIONNAIRE RESULTS

	IGE Schools*	Comparison Schools*
1. How many fiction books are circulated in an average day?	82	82
2. How many non-fiction books are circulated in an average day?	51	65
3. How many reference books are circulated in an average day?	13	10
4. What is the total number of books in the library?	5759	8127

	IGE Schools**	Comparison Schools**
5. What is the general usage of reference books in a typical day?		
not at all	0	0
very little	0	0
some	5	7
great	4	2
very great	0	0
6. What is the general usage of periodicals in a typical day?		
not at all	1	0
very little	4	2
some	1	3
great	3	4
very great	0	0
7. Do you have games, puzzles, etc. available for student use in the library?		
no	4	3
yes	5	6
8. If so, what is the usage in a typical day?		
not at all	0	0
very little	0	0
some	4	4
great	0	1
very great	1	0

* Results are listed as mean responses.

** The numbers listed correspond to the responses that were made. There were nine IGE respondents and nine Comparison school respondents.

	IGE Schools	Comparison Schools
9. Do you have audio-visual equipment available for student use in the library?		
no	1	2
yes	8	7
10. If so, estimate the usage on a typical day.		
not at all	0	0
very little	0	1
some	5	3
great	2	1
very great	1	1
11. Is there a separate "learning center" for audio-visual equipment that is used in conjunction with the library?		
no	4	8
yes	5	1
12. To what extent is normal social interaction (talking at normal volume; laughing; discussion; etc.) allowed in the library?		
not at all	0	0
very little	0	0
sometimes	6	3
much	1	4
very much	2	1
13. Are there specific, scheduled times when whole and/or partial classes visit the library?		
not at all	0	0
very little	1	0
sometimes	0	1
frequently	5	3
very often	3	4
14. Is the library always open to individual students when they are not scheduled for specific subjects?		
not at all	0	0
very little	0	0
sometimes	0	1
frequently	2	1
very often	7	7
15. Is the library used as a reward for the completion of contracted or assigned work?		
not at all	0	0
very little	1	0
sometimes	2	7
frequently	5	2
very often	1	0

	IGE Schools	Comparison Schools
16. To what extent are pupils allowed to check out books on their own?		
not at all	0	0
very little	0	0
sometimes	0	0
frequently	2	1
very often	7	8
17. Please estimate how often classroom collections are used by teachers during a typical week.		
not at all	0	0
very little	0	1
sometimes	4	0
frequently	3	3
very often	2	4
18. Are you consulted as a resource person for the supplementing of classroom materials?		
never	0	0
seldom	0	0
sometimes	2	1
usually	6	7
always	1	1
19. Do you make announcements to the school concerning media, new books, etc. that are available?		
never	0	0
seldom	0	0
sometimes	3	1
usually	3	3
always	3	5
20. Do you have formal and/or informal instruction for pupils concerning library usage?		
no	0	1
sometimes	7	7
yes	1	1
21. Which method of instruction is used predominantly?		
formal	1	0
informal	8	7
22. Are there any serious problems in your library with the return, damage, or loss of books?		
not at all	1	0
very little	1	4
sometimes	5	3
frequently	1	2
very often	1	0

	IGE Schools	Comparison Schools
23. In your opinion, have you noticed an increase in library usage in the last school year?		
not at all	1	0
very little	2	3
sometimes	3	1
frequently	2	2
very often	0	1
25. To what extent do you think the library is functioning as an integral part of the pupil's learning process in your school?		
not at all	0	0
very little	0	0
somewhat	2	1
much	6	6
very much	1	2